

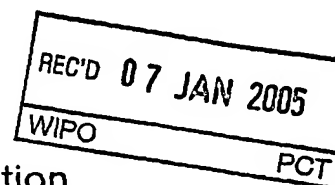
PCT/EP2004/012740



Europäisches  
Patentamt

European  
Patent Office

Office européen  
des brevets



Bescheinigung

Certificate

Attestation

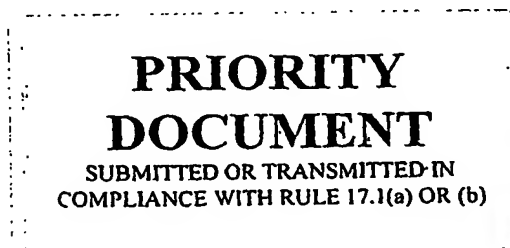
Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten europäischen Patentanmeldung überein.

The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

Patentanmeldung Nr. Patent application No. Demande de brevet n°

03025739.8



Der Präsident des Europäischen Patentamts;  
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets  
p.o.

R C van Dijk

BEST AVAILABLE COPY



Anmeldung Nr:  
Application no.: 03025739.8  
Demande no:

Anmeldetag:  
Date of filing: 10.11.03  
Date de dépôt:

Anmelder/Applicant(s)/Demandeur(s):

Epigenomics AG  
Kastanienallee 24  
10435 Berlin  
ALLEMAGNE

Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:  
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.  
If no title is shown please refer to the description.  
Si aucun titre n'est indiqué se référer à la description.)

Method for the analysis of gynecological cell proliferative disorders

In Anspruch genommene Priorität(en) / Priority(ies) claimed /Priorité(s)  
revendiquée(s)  
Staat/Tag/Aktenzeichen/State/Date/File no./Pays/Date/Numéro de dépôt:

Internationale Patentklassifikation/International Patent Classification/  
Classification internationale des brevets:

C12Q1/68

Am Anmeldetag benannte Vertragsstaaten/Contracting states designated at date of  
filing/Etats contractants désignées lors du dépôt:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL  
PT RO SE SI SK TR LI

Munich  
41  
10. Nov. 2003

FB13220  
EPIGENOMICS AG, Berlin

### **Method for the analysis of gynecological cell proliferative disorders.**

The present invention relates to a method for the detection, differentiation and prognosis of a gynaecological cell proliferative disorder, comprising the following steps: a) obtaining a cervicovaginal secretion specimen from an individual b) determining the methylation status of at least one or more CpG positions c) determining from said methylation status the presence, classification and/or prognosis of a gynaecological cell proliferative disorder in said individual. The present invention further relates to a kit for performing said method.

### **Field of the Invention**

#### **Endometrial cancer**

Endometrial cancer is one of the most common genital cancers in women worldwide. The highest incidence rates are observed in Western Europe and North America. The well known risk factors for endometrial cancer include obesity, type 2 diabetes mellitus and hypertension. Additionally, anovulation and long term use of unopposed estrogens for hormone replacement therapy increase the risk for endometrial cancer. Genetic causes of endometrial cancer are uncommon, although there is an association with hereditary non-polyposis colon cancer syndrome, in which the individual risk rises to a cumulative incidence of 40% by age 70 years. In 2001, the American Cancer Society concluded that there was insufficient evidence to recommend screening for endometrial cancer for women at average risk or increased risk due to history of unopposed estrogen therapy, nulliparity, infertility or failure to ovulate, obesity, diabetes, or hypertension. Studies examining endometrial carcinoma screening methods for asymptomatic postmenopausal women have used ultrasound-determined endometrial thickness as an indication of risk. Transvaginal ultrasonography compared with endometrial biopsy for the detection of endometrial disease had a positive predictive value of only nine percent for detecting any abnormality, with 90 percent sensitivity and 48% specificity (Langer, R. D., Pierce, J. J., O'Hanlan, K. A., Johnson, S. R., Espeland, M. A., Trabala, J. F., Barnabei, V. M., Merino, M. J., and Scully, R. E. Transvaginal ultrasonography compared with endometrial biopsy for the detection of endometrial disease. Postmenopausal Estrogen/Progestin Interventions Trial. N. Engl. J. Med., 337: 1792-1798, 1997.). There is a need for a sensitive and specific screening test for high-risk women. It has been shown that genetic abnormalities can be used to detect endometrial cancer. Changes in the status of DNA methylation are among the

most common molecular alterations in human neoplasias ( Jones, P. A. DNA methylation errors and cancer. *Cancer Res.*, 56: 2463-2467, 1996.). It has been increasingly recognized over the past four to five years that the CpG islands of a large number of genes, which are unmethylated in normal tissue, are methylated to varying degrees in multiple types of human cancer (Jones, P. A. and Laird, P. W. Cancer epigenetics comes of age. *Nat. Genet.*, 21: 163-167, 1999). Aberrant methylation of CpG islands within the promoter regions of several genes such as *E-cadherin*, *adenomatous polyposis coli (APC)*, *MLH1*, *p16*, *estrogen receptor*, *progesterone receptor* and *PTEN (MMAC1)* has been identified in endometrial cancer tissue. Up to now, no investigations have been undertaken to assess the methylation status of DNA obtained from cervicovaginal secretion from endometrial cancer patients.

Long-term tamoxifen users who are at increased risk for endometrial cancer have a worse prognosis for such cancers, which seems to be due to less favorable histology and higher stage. This indicates an urgent need for a simple, non-invasive means of early detection of endometrial cancer, especially in this subgroup of women.

#### Cervical cancer

Cancer of the uterine cervix is an important cause of death in women worldwide. Since the introduction of PAP smears in screening programs the incidence and mortality of cervical cancer have decreased dramatically. However, successful screening strongly depends on the coverage rate of the population and the sensitivity and specificity of the screening test. A meta-analysis of studies investigating the pap test for the detection of cervical cancer and its precursors revealed a sensitivity ranging from 30% to 87% and a specificity ranging from 86% to 100%. Converging evidence from epidemiological and molecular studies suggests that infection with genital human papillomavirus (HPV<sup>3</sup>) is causally linked to the development of cervical cancer. Therefore, testing for HPV DNA has been evaluated to improve cervical cancer screening. Numerous studies showed a high sensitivity for the HPV test in detecting cervical cancer and its precursors, whereas specificity was usually lower in comparison to cytology. To reduce the inconvenience and cost of repeated clinical visits, it has been proposed that women collect cervicovaginal specimens themselves for HPV DNA assay, hopefully increasing the coverage of screening programs.

Several studies investigated HPV DNA detection rates between self-collected and physician-collected samples with varying concordance between the two different collection methods.



In addition to HPV infection, it is clear that other factors are also involved in cervical carcinogenesis because the majority of patients with HPV-associated lesions do not progress to invasive cancer. Changes in the status of DNA methylation are among the most common molecular alterations in human neoplasias. Recently, an aberrant methylation pattern was found during the multistage pathogenesis of cervical cancer with a trend to increasing methylation with increasing pathological changes (Virmani, A. K., Muller, C., Rath, A., Zochbauer-Mueller, S., Mathis, M., and Gazdar, A. F. Aberrant methylation during cervical carcinogenesis. Clin. Cancer Res., 7: 584-589, 2001).

In a study by Kinney *et al.* Up to 60% of women diagnosed as having invasive cervical cancer were not screened despite health maintenance organization enrolment. To reduce the inconvenience and cost of repeated clinical visits it has been proposed that women collect cervicovaginal specimens themselves, thus hopefully increasing the coverage of screening programs. Previous studies investigating HPV DNA detection rates between self-collected and physician-collected samples described varying concordance between the two different collection methods. Recently, it was shown that clinician-directed swabs detect up to 28% more HPV-positive women in comparison to tampon-collected specimens. In light of the fact that numerous studies have revealed a nearly 100% sensitivity in detecting SIL and cervical cancer by HPV DNA testing of physician-collected samples, specimen collection by tampon seems not to be a feasible method for HPV DNA detection.

It has been proposed that in addition to HPV infection genetic or epigenetic alterations may be required to maintain a malignant phenotype. Changes in the status of DNA methylation are among the most common molecular alterations in human neoplasias. Recently it was suggested that aberrant methylation may play a role in cervical carcinogenesis (Virmani, A. K., Muller, C., Rath, A., Zochbauer-Mueller, S., Mathis, M., and Gazdar, A. F. Aberrant methylation during cervical carcinogenesis. Clin. Cancer Res., 7: 584-589, 2001).

Cervical cancer is the principal cause of death due to cancer in women. Five-year survival rate ranges from 15 to 80 percent, depending on the extent of the disease. Recently, several studies showed a significant reduction in the risk of relapse and death from cervical cancer, which was achieved by concurrent use of chemotherapy and radiotherapy. New predictive markers for relapse may increase survival rates by improving treatment of patients at high risk for relapse.

Several clinical and histopathological characteristics, namely tumor stage, lymph node metastasis and vascular invasion, have been shown to be prognostic factors for recurrent disease. However, new molecular and biochemical approaches for the recognition and treatment of high risk patients are needed to improve survival and avoid over-treatment of low-risk patients. The gene products of *CDH1* and *CDH13*, namely E-cadherin and H-cadherin, play a key role in cell-cell adhesion. Changes in cell-cell and cell-matrix adhesion accompany the transition from benign tumor to invasive, malignant cancer and the subsequent metastatic dissemination of tumor cells. Decrease or loss of E-cadherin expression is a common finding in many human epithelial cancers including cervical cancer. The cadherin-mediated cell adhesion system can be inactivated by several mechanisms. It has been reported that aberrant methylation of CpG islands in the E-cadherin (*CDH1*) as well as in the H-cadherin (*CDH13*) promotor or 5'-region may lead to decreased E-cadherin and H-cadherin expression. Numerous studies have demonstrated tumor-specific alterations in DNA recovered from plasma or serum of patients with various malignancies, a finding that has potential for molecular diagnosis and prognosis.

Abnormalities of cell adhesion molecule expression like E-cadherin (*CDH1*) and H-cadherin (*CDH13*) occur in various neoplastic diseases, and there is some evidence to suggest that these abnormalities are significant in the progression of certain tumor types including cervical cancer. Several mechanisms like tumor hypoxia and necrosis; stimulation of the epidermal growth factor receptor (EGFR) by EGF or TGF- $\alpha$  and mutations of the *CDH1* gene have been proposed for cadherin downregulation. Recently, aberrant promoter methylation of *CDH1* and *CDH13* has been described to be one of the mechanisms causing loss of or decreased E-cadherin and H-cadherin expression. Decreased E-cadherin expression has been shown to be related to enhanced metastasizing activity or more aggressive malignant tumors.

Methylated DNA has been investigated as a possible screening marker for neoplastic disease in several body fluids (Muller, H. M. and Widschwendter, M. Methylated DNA as a possible screening marker for neoplastic disease in several body fluids. *Expert Rev Mol Diagn*, 3: 443-458, 2003). However, up to now, no investigations have been undertaken to assess the methylation status of DNA obtained from cervicovaginal secretion for the assessment of patients with gynaecological cellproliferative disorders.

## Description

Current methods of endometrial cancer diagnosis, namely transvaginal ultrasonography compared with endometrial biopsy for the detection of endometrial disease are estimated to have a positive predictive value of only nine percent for detecting any abnormality, with 90% sensitivity and 48% specificity. There is a need in the art for a sensitive and specific screening test for high-risk women.

The standard screening test for cervical cancer is the PAP smear. Successful screening strongly depends on the coverage rate of the population and the sensitivity and specificity of the screening test. A meta-analysis of studies investigating the pap test for the detection of cervical cancer and its precursors revealed a sensitivity ranging from 30% to 87% and a specificity ranging from 86% to 100%. However the success of screening programs aimed at detecting precancerous conditions (dysplasia) and treating them before they progress is often limited by socio-economic factors. It has been estimated that only about 5 % of women in developing countries have been screened for cervical dysplasia in the past 5 years, compared with some 40% to 50% of women in developed countries. In order to improve the successful screening of populations for cervical cancer, especially of the high-risk population with low socio-economic status, there is a need for a sensitive, specific, cost effective and self-administrable cervical cancer test.

Cervical cancer is in many cases a treatable disease, however for those patients who have poor prognosis a significant reduction in the risk of relapse and death can be achieved by concurrent use of chemotherapy and radiotherapy. However, current prognostic markers, mainly histological, only provide a limited indication of patient prognosis. Furthermore treatment of patients who are not at risk of relapse by adjuvant treatments can lead to unnecessary side effects. Therefore there exists a need in the art for improved and preferably self-administrable means of detection and prognosis of cervical cancer.

The method according to the invention provides novel sensitive and specific means for the detection, differentiation and prognosis of gynaecological cell proliferative disorders by analysis of cervicovaginal secretions. The method thereby enables specimen collection by the patient without the need for the aid of a physician. In a further aspect the invention provides methods for the analysis of said specimen for genomic methylation features associated with a

variety of gynaecological cell proliferative disorders, in particular those of the endometrium and cervix. In a further aspect the invention provides novel nucleic acids for the analysis of said cervicovaginal secretion specimen that enable the detection, differentiation and prognosis of gynaecological cell proliferative disorders. The invention further provides kits for the analysis of cervicovaginal secretions for the analysis of methylation features that enable the detection, differentiation and prognosis of gynaecological cell proliferative disorders.

The method according to the invention comprises the following steps:

- a) obtaining a cervicovaginal secretion specimen from an individual,
- b) determining the methylation status of at least one or more CpG positions,
- c) determining from said methylation status the presence, classification and/or prognosis of a gynaecological cell proliferative disorder in said individual.

The cervicovaginal secretion may be obtained by any means standard in the art, including but not limited to gynaecological swab, aspiration and cervicovaginal lavage. However in the most preferred embodiment of the method said specimen is collected by means of a tampon inserted into the individual's vaginal passage, it is preferred that the tampon is then stored in a buffer or other suitable solution. It is a particularly preferred embodiment of the invention that this step of the method is carried out by said individual, without the assistance of a physician or other healthcare professional. The solute containing DNA from the cervicovaginal may then be used in the further steps of the method.

The utility of self administered cervicovaginal specimen collection has been well established for testing of HPV (Human papilloma virus), an indicator of cervical cancer. Studies in the United States (Harper DM, Hildesheim A, Cobb JL, Greenberg M, Vaught J, Lorincz AT. Collection devices for human papillomavirus. J Fam Pract. 1999 Jul;48(7):531-5.) showed an 80% diagnosis concordance rate between specimens collected by the physician and those collected by the patient using vaginal tampons. However, the use of this technique for analysis of the diseased tissues themselves have so far, not been published.

The cervicovaginal specimen, or solution thereof is then analysed by means of a sensitive methylation assay in order to detect aberrant methylation patterns associated with the development of gynaecological cell proliferative disorders, this is enabled by analysing one or more CpG positions the aberrant methylation of which is a feature of a gynaecological cell

proliferative disorders or an indicator of prognosis thereof. In the final step of the method the presence, classification and/or prognosis of a gynaecological cell proliferative disorder is determined from said determined methylation status of one or more CpG positions.

In a preferred embodiment of the method the gynaecological cell proliferative disorder is selected from the group consisting no dysplasia or low grade squamous intraepithelial lesions, high-grade squamous intraepithelial lesions, cervical cancer, endometrial cancer and grade 1 to 3 cervical intraepithelial neoplasia.

In one embodiment of the method said CpG positions are selected from one or more genes taken from the group consisting of *CDH1*, *CDH13*, *RASSF1A*, *hMLH1*, *HSPA2*, *SOCS1*, *SOCS2*, *GSTP1*, *DAPK*, *TIMP3* and *hTERT* and/or promoters, introns, first exons, regulatory elements and/or enhancers thereof. It is also a further embodiment of the invention that the sequence of said genes are selected from the group consisting of SEQ ID No: 1 to SEQ ID No: 11 according to Table 7.

In one embodiment of the method endometrial cancer is detected or differentiated from other endometrial cell proliferative disorders by analysis of one or more CpG positions of the genes *RASSF1A*, *hMLH1*, *CDH13*, *HSPA2* and *SOCS2*, in a further embodiment of said method the sequences of said genes are selected from SEQ ID Nos: 2, 3, 4, 5 and 7 according to Table 7.

In one embodiment of the method cervical cancer is detected or differentiated from other cervical cell proliferative disorders by analysis of one or more CpG positions of the genes *SOCS1*, *CDH1*, *TIMP3*, *GSTP1*, *DAPK*, *hTERT*, *CDH13*, *HSPA2*, *MLH1*, *RASSF1A* and *SOCS2*, in a further embodiment of said method the sequences of said genes are selected from SEQ ID Nos: 1 to 11 according to Table 7.

In a further embodiment of the method the prognosis of a patient with cervical cancer is determined by analysis of one or both of the genes *CDH1* and *CDH13*, in a further embodiment of said method the sequences of said genes are selected from SEQ ID Nos 1 and 2 according to Table 7. Hypermethylation of the genes are correlated with a worse prognosis of life expectancy of the patient.

Once a cervicovaginal secretion specimen is obtained from the patient according to step a) of the method genomic DNA is isolated. This may be by any means standard in the art, including the use of commercially available kits. Briefly, wherein the DNA of interest is encapsulated in by a cellular membrane the biological sample must be disrupted and lysed by enzymatic, chemical or mechanical means. The DNA solution may then be cleared of proteins and other contaminants e.g. by digestion with proteinase K. The genomic DNA is then recovered from the solution. This may be carried out by means of a variety of methods including salting out, organic extraction or binding of the DNA to a solid phase support. The choice of method will be affected by several factors including time, expense and required quantity of DNA.

The isolated genomic DNA is then analysed for aberrant methylation of CpG dinucleotides. This may be by any means standard in the art including the use of methylation sensitive restriction enzymes. However it is required that a method capable of high sensitivity be used as there is only likely to be a minimal amount of DNA from the diseased tissue present in the sample. Therefore it is particularly preferred that step b) of the method is carried out by treating the genomic DNA, or a fragment thereof, with one or more reagents to convert 5-position unmethylated cytosine bases to uracil or to another base that is detectably dissimilar to cytosine in terms of hybridization properties. This treatment is preferably carried out by means of a bisulfite reagent (bisulfite, disulfite, hydrogen sulfite or combinations thereof) followed by alkaline hydrolysis. It is a further embodiment of the method that post-treatment the sequences to be analyzed are taken from the group consisting of SEQ ID NO: 12 to 55.

The treated genomic DNA, or the treated fragment thereof, are then preferably contacted with an amplification enzyme and at least two primers comprising, in each case a contiguous sequence at least 9 nucleotides in length that is complementary to, or hybridizes under moderately stringent or stringent conditions to a target nucleic acid. It is a further embodiment of the method that post-treatment the sequences to be analyzed are taken from the group consisting of SEQ ID NO: 12 to 55. In the final step of the method the methylation state of at least one CpG dinucleotide sequence, or an average, or a value reflecting an average methylation state of a plurality of CpG dinucleotide sequences is determined based on a presence or absence of, or on a property of said amplificate whereby at least one of detecting a gynecological cell proliferative disorder, or distinguishing between gynecological cell proliferative disorders is, or providing a prognosis at least in part, afforded.

This may be carried out by any means standard in the art that enables the detection of small amounts of methylated DNA against a high background of non-methylated DNA. Particularly preferred are the MSP, HeavyMethyl (blocking oligonucleotides) and RealTime assays (including, but not limited to the Ligthcycler and MethyLight assays) and all possible combinations thereof.

The term "MSP" (Methylation-specific PCR) refers to the art-recognized methylation assay described by Herman et al. *Proc. Natl. Acad. Sci. USA* 93:9821-9826, 1996 . In MSP applications, the use of methylation status specific primers for the amplification of bisulphite-treated DNA allows for distinguishing between methylated and unmethylated nucleic acids. MSP primer pairs contain at least one primer which hybridizes to a bisulphite-treated CpG dinucleotide of a pre-specified methylation state. Therefore, the sequence of said primers comprises at least one CpG, TpG or CpA dinucleotide. MSP primers specific for non-methylated DNA contain a 'T' at the 3' position of the C-position in the CpG dinucleotide. Detection of the amplificate allows for the determination of the presence of a methylated nucleic acid. The use of MSP thereby allows for the detection of a nucleic acid of a pre-specified methylation state to be amplified against a background of alternatively methylated nucleic acids (*see* figure 8 herein and the accompanying description).

In the HeavyMethyl® technique, polymerase amplification is aided by the use of blocking oligonucleotides, this technique may be used to block amplification of target nucleic acids of one methylation status thereby increasing the relative proportion of the amplificate nucleic acids of the other methylation status. The primers may be methylation specific ('MSP') or specific to non-CpG treated target nucleic acids. The methylation status of the bisulphite-treated CpG dinucleotides is determined by means of oligonucleotide blocking probes that are not displaced by the action of the polymerase, and thus block amplification of the sequence (*see* Figure 9). Non-displacement of the blocking oligonucleotides may be achieved by use of a polymerase that has no 5'-3' exonuclease activity, by use of peptide nucleic acid oligomers or by use of suitably modified oligonucleotides (e.g. a DNA oligomer lacking a free 3'-hydroxyl group)

Figure 9 shows polymerase-mediated amplification analysis of bisulfite-treated DNA ("3") corresponding to a CpG-rich genomic sequence by means of the HeavyMethyl® technique. Amplification of the treated DNA ("3") is precluded if the blocking oligonucleotide ("5")

anneals to the treated DNA as shown for the example case "B." The arrows ("1") represent primers, and dark circular marker positions ("2") on the bisulfite-treated nucleic acid strand ("3") represent methylated bisulfite-converted CpG positions, whereas white circular marker positions ("4") represent unmethylated bisulfite-converted positions. The blocking (blocker) oligonucleotides are represented by dark bars ("5"). In the example case "A," all subject genomic CpG positions were co-methylated, and both forward and reverse primers anneal to provide for unimpeded amplification of the corresponding treated nucleic acid ("3"). In the second example case "B," none of the subject genomic CpG positions were methylated, both forward and reverse primers anneal to the treated DNA sequence ("3") but are unable to amplify the sequence, because the synthesis of the complementary strand is blocked by the blocking oligonucleotide ("5") that anneals to a complementary position comprising unmethylated CpG sequences in the subject genomic DNA.

'Real time' based methods employ the use of a detection probe that hybridizes to a treated target nucleic acids during PCR amplification thereby enabling the detection of the amplified nucleic acid. The detection probes may be designed to hybridize to methylation specific target sequences by comprising one or more CpG, TpG or CpA dinucleotides. Suitable real time PCR based methods, include the art-recognized fluorescence-based real-time PCR technique MethyLight™ (Eads et al., *Cancer Res.* 59:2302-2306, 1999; U.S. Patent No. 6,331,393 to Laird et al.; and see Heid et al., *Genome Res.* 6:986-994, 1996) and the TaqMan assay. A particularly preferred embodiment comprises use of fluorescence-based Real Time Quantitative PCR (Heid et al., *Genome Res.* 6:986-994, 1996) employing a dual-labeled fluorescent oligonucleotide probe (TaqMan™ PCR, using an ABI Prism 7700 Sequence Detection System, Perkin Elmer Applied Biosystems, Foster City, California). The TaqMan™ PCR reaction employs the use of a nonextendible interrogating oligonucleotide, called a TaqMan™ probe, which is designed to hybridize to a CpG-rich sequence located between the forward and reverse amplification primers. The TaqMan™ probe further comprises a fluorescent "reporter moiety" and a "quencher moiety" covalently bound to linker moieties (e.g., phosphoramidites) attached to the nucleotides of the TaqMan™ oligonucleotide. For analysis of methylation within nucleic acids subsequent to bisulfite treatment, the probe is preferably methylation specific, as described in U.S. 6,331,393, (hereby incorporated by reference) also known as the MethyLight® assay. Variations on the TaqMan™ detection methodology that are also suitable for use with the described invention include the use of dual probe technology (Lightcycler™) or fluorescent amplification primers (Sunrise™ technology).



In the final step of the method the determination of the presence, absence, classification or prognosis is determined according to the methylation status of the analyzed CpG positions. This is carried out by reference to a pre-existing data set that defines the methylation patterns characteristic to each disease phenotype. Preferably, the correlation of the methylation status of the marker CpG positions with the phenotypic parameters is done substantially without human intervention. Machine learning algorithms automatically analyse experimental data, discover systematic structure in it, and distinguish relevant parameters from uninformative ones.

Machine learning predictors are trained on the methylation patterns at the investigated CpG sites of the samples with known phenotypical classification. The CpG positions which prove to be discriminative are used to define the reference data set. This method is successful in cancer classification (Model, F., Adorjan, P., Olek, A., and Piepenbrock, C., *Bioinformatics*. 17 Suppl 1:157-164, 2001).

Moreover, an additional aspect of the present invention is a kit comprising, for example: a bisulfite-containing reagent; a set of primer oligonucleotides containing at least two oligonucleotides whose sequences in each case correspond, are complementary, or hybridize under stringent or highly stringent conditions to a 16-base long segment of the sequences SEQ ID NOs:1 to SEQ ID NO:55; oligonucleotides and/or PNA-oligomers; as well as instructions for carrying out and evaluating the described method. In a further preferred embodiment, said kit may further comprise standard reagents for performing a CpG position-specific methylation analysis, wherein said analysis comprises one or more of the following techniques: MSP, MethyLight™ and HeavyMethyl™. However, a kit along the lines of the present invention can also contain only part of the aforementioned components.

Typical reagents (e.g., as might be found in a typical MethyLight™ based kit) for MethyLight™ analysis may include, but are not limited to: PCR primers for specific gene (or methylation-altered DNA sequence or CpG island); TaqMan® probes; optimized PCR buffers and deoxynucleotides; and Taq polymerase.

Typical reagents (e.g., as might be found in a typical MSP-based kit) for MSP analysis may include, but are not limited to: methylated and unmethylated PCR primers for specific gene

(or methylation-altered DNA sequence or CpG island), optimized PCR buffers and deoxynucleotides, and specific probes.

Typical reagents (e.g., as might be found in a typical MethyLight based kit) for HeavyMethyl analysis may include, but are not limited to: PCR primers for specific gene (or methylation-altered DNA sequence or CpG island); HeavyMethyl blocking oligonucleotides; optimized PCR buffers and deoxynucleotides; and polymerase.

Additionally, bisulfite conversion reagents may include: DNA denaturation buffer; sulfonation buffer; DNA recovery reagents or kits (e.g., precipitation, ultrafiltration, affinity column); desulfonation buffer; and DNA recovery components.

The present invention shall now be further described without limitation thereof in the following examples with respect to the accompanying Figures and the attached sequence protocol. In the Figures,

Fig. 1 shows a flowchart of procedures for tampon insertion and sample preparation.

A - Tampon insertion.

B - Tampon transfer into a 50-ml tube.

C - Addition of 1.2 ml PBS buffer onto the tampon.

D - Centrifugation at 1000g for 10 min.

E - (1) shows the supernatant and (2) shows the pellet.

F - 0.2-ml aliquots of the supernatant fraction were each mixed with 0.2 ml of the working solution of the HighPure Viral Nucleic Acid kit and stored at  $-30^{\circ}\text{C}$  until DNA isolation.

Fig. 2 shows the PMR values of 38 genes in patients without endometrial cancer (N=4) and with endometrial cancer (N=5) the genes *RASSF1A*, *hMLH1*, *CDH13*, *HSPA2* and *SOCS2* are highlighted with arrows.

Fig. 3 shows the methylation status of the five investigated genes (full box = methylated, empty box = unmethylated), status (endometrial cancer or no endometrial cancer) and age. \* indicates cervical intraepithelial neoplasia grade III (CIN III); † indicates invasive cervical cancer.

Fig. 4 shows the ROC for detection of endometrial cancer by methylation analysis of DNA obtained from vaginal secretion for patients between 50 and 75 years of age (excluding patients with CIN III or cervical cancer, area under the curve is 0.988.

Fig. 5 shows the trend to increasing methylation from low-grade SIL to invasive cervical cancer. A statistically significant correlation between type of histology and number of methylated genes ( $\rho = 0.47$ ,  $P = 0.001$ ) was found. No case had 10 or 11 methylated genes. Figure 5B shows High grade SILs ( $n=31$ ). Figure 5A shows low grade/no dysplasia SILs ( $n=13$ ) and figure 5C shows invasive cervical cancer ( $n=5$ ). The X axis scale shows the percentage of methylation positive samples, the Y axis shows the number of methylated genes.

Fig. 6 shows DNA methylation status of 11 genes in 49 cervicovaginal specimens was analysed using the MethyLight technique. A gene was deemed methylated if the PMR value was  $> 0$  (Material and Methods; white and pink indicate unmethylated and methylated, respectively). Groups of patients were determined using unsupervised agglomerative hierarchical cluster analysis (average linkage, Manhattan distance) to group specimens and CpG regions. Gene names are given at the top of the figure. The inventors observed two clusters: 1 (red), 2 (blue). All patients with cervical cancer are grouped together in one cluster (blue).

Fig. 7 shows disease-free (A) and overall survival (B) according to *CDH1/CDH13* methylation status in serum samples. The lower dotted lines represent the methylated samples, the unbroken upper lines represent the unmethylated samples.

Figure 8 shows the polymerase mediated amplification of a CpG-rich sequence using methylation specific primers on four representative bisulfite-treated DNA strands (example cases "A"- "D") ("MSP Amplification"). The methylation specific forward and reverse primers ("1"), in each case, can anneal to the bisulfite-treated DNA strand ("3") if the corresponding subject genomic CpG sequences were methylated. The bisulfite-treated DNA strand ("3") can be amplified if both forward and reverse primers ("1") anneal, as shown in representative case "A" at the top of the figure.

Figure 9 shows polymerase-mediated amplification analysis of bisulfite-treated DNA ("3") corresponding to a CpG-rich genomic sequence by means of the MethylHeavy® technique.

Amplification of the treated DNA ("3") is precluded if the blocking oligonucleotide ("5") anneals to the treated DNA as shown for the example case "B."

## Examples

### Example 1

The following study was performed to determine whether it is possible to detect endometrial cancer by analyzing methylated DNA in cervicovaginal secretion.

**Patients and Samples.** A total of 124 patients were recruited for this study: 15 patients had endometrial cancer, while the no endometrial cancer group contained five patients with invasive cervical cancer, 35 with cervical intraepithelial neoplasia (CIN I, three cases; CIN II, 19 cases; CIN III, 13 cases), and 69 patients with benign disease of the uterus. Sample collection was done between 01.01.2003 and 31.05.2003 at the Department of Obstetrics and Gynecology, Innsbruck University Hospital, Austria. All patients who were scheduled to undergo surgery of the uterus on the next day including a histological diagnosis were invited to attend the study. Samples and clinical data were collected after informed consent was obtained. To ensure standardized sample collection a tampon was inserted in the patient by a physician after speculum examination and retained intravaginal for 30 minutes. Preparation of the samples is shown in Figure 1.

**DNA Isolation and Methylation Analysis.** Genomic DNA from samples was isolated using the *High Pure Viral Nucleic Acid Kit* (Roche Diagnostics, Mannheim, Germany) according to the manufacturer's protocol with some modifications for multiple loading of the DNA extraction columns to gain a sufficient amount of DNA. Sodium bisulfite-treated genomic DNA was analyzed by means of MethyLight, a fluorescence-based, real-time PCR assay, as described previously. Briefly, two sets of primers and probes, designed specifically for bisulfite-converted DNA, were used: a methylated set for the gene of interest and a reference set,  $\beta$ -actin (*ACTB*), to normalize for input DNA. Specificity of the reactions for methylated DNA was confirmed separately using *SssI* (New England Biolabs)-treated human white blood cell DNA (heavily methylated). The percentage of fully methylated molecules at a specific locus was calculated by dividing the *GENE:ACTB* ratio of a sample by the *GENE:ACTB* ratio of *SssI*-treated white blood cell DNA and multiplying by 100. The abbreviation PMR (percentage of fully methylated reference) indicates this measurement. A gene was deemed methyl-

ated if the PMR value was  $> 0$ . Primer and probes specific for methylated DNA and used for MethyLight reactions are listed in Table 1.

**Statistical Analysis.** Associations between categorical variables were tested using the Chi-Square test. Differences in median of age were examined with the Mann-Whitney U test or – between more than two groups – with the Kruskal Wallis test. Due to a significant age difference between endometrial cancer patients and the no endometrial cancer group, an age-matched group of the no endometrial cancer group with a matching ratio 1:2 was randomly selected. The computation of the Matching-Group was done using MATLAB R12 ([www.mathworks.com](http://www.mathworks.com)). For determination of diagnostic accuracy a non-parametric Receiver Operating Curve (ROC) Analysis with Linear Interpolation was performed. A P-value of less than 0.05 was considered statistically significant. All statistical calculations were performed using SPSS, version 11.0, for Windows.

## Results

Aberrant methylation of 38 genes in DNA obtained from vaginal secretion from the first five patients with endometrial cancer and the first four patients with benign disease was analyzed to determine appropriate genes for further study. The most appropriate genes for our further analyses were determined to be those that revealed the greatest difference in PMR values between patients with benign disease of the uterus and endometrial cancer patients (Fig. 2). Five genes, namely *RASSF1A*, *hMLH1*, *CDH13*, *HSPA2* and *SOCS2*, were selected for further analysis. DNA methylation in three or more of these five genes was observed in cervicovaginal secretion of all five patients with endometrial cancer, whereas all four patients without endometrial cancer showed no or fewer than three genes to be methylated. The inventors therefore determined the cut-off value between no endometrial cancer and endometrial cancer as methylation positive in three or more of the five investigated genes.

The overwhelming majority of the patients without endometrial cancer (99 of 109) revealed no or fewer than three genes methylated, whereas all of the 15 endometrial cancer patients had three or more genes methylated in their vaginal secretion (Fig. 3,  $P < 0.001$ ,  $\chi^2$  test). Histological examination of the ten patients in the no endometrial cancer group with three or more genes methylated revealed invasive cervical cancer (four cases), CIN III (one case), endometrium polyp (four cases) and fibroids (one case). Samples were collected after primary surgery (curettage, punch biopsy of the cervix or hysteroscopic operation) and before second-

dary surgery (hysterectomy) in 16 out of 124 patients; 9/16 patients had endometrial cancer, 3/16 CIN III and 4/16 benign disease of the endometrium. All nine endometrial cancer patients had three or more genes methylated, the three CIN III patients revealed no methylated genes and one of the patients with benign disease showed one gene to be methylated. Within the group of patients from whom the vaginal secretion was collected prior to any surgery, one patient presented due to sonographically detected serometra with complete stenosis of the cervicouterine canal. Even this patient showed methylation of three of the five tested genes. DNA methylation of the five genes identified, seems to increase with age although statistically not significant (data not shown). Using all 15 endometrial cancer cases and 109 controls, the area under the ROC curve was 0.973 (data not shown). To rule out the possibility that abnormal DNA methylation is merely a surrogate for age rather than a cancer-specific marker, the inventors randomly age-matched two non-endometrial cancer controls for each endometrial cancer case. Investigation of DNA methylation in the cervicovaginal secretion of these 45 patients was still able to discriminate between endometrial cancer and patients without endometrial cancer ( $P < 0.001$ ,  $\chi^2$  test) with a sensitivity of 100% and a specificity of 80%.

When analyzing all patients between 50 years and 75 years of age and excluding patients with CIN III or cervical cancer sensitivity was 100% and the specificity rose to 97.2% (Fig. 4). In this group only one out of 35 samples was false positive.

In our study all endometrial cancer patients revealed three or more of the five investigated genes methylated, whereas 99 out of 109 patients without endometrial cancer had no or fewer than three genes methylated. Four out of ten patients in the no endometrial cancer group with three or more genes methylated had invasive cervical cancer. These cases indicate that some cervical cancer patients can also be identified with this assay.

In some cases (16 out of 124) samples were collected after primary surgery and before secondary surgery. All endometrial cancer patients in this group had three or more genes methylated. These results demonstrate that aberrant methylation analysis can detect endometrial cancer even after primary surgery.

As endometrial cancer is more prevalent in older women and abnormal DNA methylation in non-malignant tissues seems to increase with age (18), the inventors especially addressed this problem within this project. Comparison of DNA methylation in the cervicovaginal secretion

of endometrial cancer patients and age-matched non-endometrial cancer controls revealed still highly significant differences between these two groups.

Endometrial cancer occurs in almost all cases after menopause. Therefore the inventors analyzed all patients between 50 years and 75 years of age and excluded patients with CIN III or invasive cervical cancer. These patients represent the group that will benefit from an endometrial cancer screening assay. In these group the sensitivity and specificity to detect patients with endometrial cancer was 100% and 97.2%, respectively.

Long-term tamoxifen users who are at increased risk for endometrial cancer have a worse prognosis for such cancers, which seems to be due to less favorable histology and higher stage. This indicates an urgent need for a simple, non-invasive means of early detection of endometrial cancer, especially in this subgroup of women.

### **Example 2**

The aim of this study was to examine whether HPV DNA testing and methylation analysis of DNA obtained from cervicovaginal specimens, collected on a tampon, are able to detect invasive cervical cancer and whether these changes are already present in the precursor lesions.

**Patients and Samples.** A total of 34 patients with cervical intraepithelial neoplasia and five patients with invasive cervical cancer were included in this study. Patients were referred to our hospital for further treatment because of abnormal PAP smear or obvious cervical lesion. Patients underwent cervical conisation or in the case of obvious carcinomatous lesion cervical biopsy to obtain a histological diagnosis. Additionally, ten patients without cervical dysplasia but who underwent hysterectomy because of fibroids were investigated. All patients were taken from a prior study performed to determine whether it is possible to detect endometrial cancer by analyzing methylated DNA in cervicovaginal specimens collected by tampon (Example 1).

**Sample collection** Samples and clinical data were collected after informed consent was obtained. To ensure standardized sample collection a tampon was inserted in the vagina by a physician after speculum examination prior to surgery (the day before) and retained intravaginal for 30 minutes. Preparation of the samples was as described in Example 1 and Figure 1. Briefly, the tampon was transferred to a 50-ml tube after removal and 1.2 ml PBS buffer was

added to the tampon. Centrifugation at 1000g for 10min produced supernatant and a pellet. Aliquots (0.2ml) of the supernatant were each mixed with 0.2ml from the working solution of the High Pure Viral Nucleic Acid Kit (Roche Diagnostics, Mannheim, Germany) and stored at -30 C until DNA isolation.

**DNA isolation and methylation analysis.** Genomic DNA from samples was isolated using the *High Pure Viral Nucleic Acid Kit* (Roche Diagnostics, Mannheim, Germany) according to the manufacturer's protocol with some modifications for multiple loading of the DNA extraction columns to gain a sufficient amount of DNA. After sodium bisulfite conversion, 11 genes (*SOCS1*, *CDH1*, *TIMP3*, *GSTP1*, *DAPK*, *hTERT*, *CDH13*, *HSPA2*, *MLH1*, *RASSF1A* and *SOCS2*) underwent methylation analysis by means of the fluorescence-based, real-time PCR MethyLight assay as described previously. Briefly, two sets of primers and probes, designed specifically for bisulfite-converted DNA, were used: a methylated set for the gene of interest and a reference set,  $\beta$ -actin (*ACTB*), to normalize for input DNA. Specificity of the reactions for methylated DNA was confirmed separately using *SssI* (New England Biolabs)-treated human white blood cell DNA (heavily methylated). The percentage of fully methylated molecules at a specific locus was calculated by dividing the *GENE:ACTB* ratio of a sample by the *GENE:ACTB* ratio of *SssI*-treated DNA and multiplying by 100. The result is given as PMR (percentage of fully methylated reference). A gene was deemed methylated if the PMR value was > 0. Primers and probes used for MethyLight reactions are listed in Table 2.

**HPV DNA analysis.** HPV PCR enzyme immunoassay (PCR-EIA) was done as described by Jacobs, M. V., Snijders, P. J., van den Brule, A. J., Helmerhorst, T. J., Meijer, C. J., and Walboomers, J. M. A general primer GP5+/GP6(+)-mediated PCR-enzyme immunoassay method for rapid detection of 14 high-risk and 6 low-risk human papillomavirus genotypes in cervical scrapings. *J. Clin. Microbiol.*, 35: 791-795, 1997. Briefly, 10  $\mu$ l of purified total cellular DNA was employed for PCR using consensus primers GP5+/bioGP6+. The reaction mixture contained 50 mM KCl, 10 mM Tris-HCl (pH 8.3), 3.5 mM MgCl<sub>2</sub>, 200  $\mu$ M of each dNTP, 1 U of thermo-stable DNA polymerase (Taq DNA Polymerase, Roche, Vienna, Austria), and 50 pmol each of the GP5+ (5-TTTGTTACTGTGGTAGATATACTAC-3 SEQ ID NO:56) and bioGP6+ (5-GAAAAATAAACTGTAAATCATATT-3 SEQ ID NO:57) primers (MWG-Biotech, Ebersberg, Germany). A 4-min denaturation step at 94°C was followed by 40 cycles of amplification in a PCR cycler (Gene Amp PCR System 9600, Perkin Elmer, Norwalk, USA). To determine the HPV type, the PCR product was subjected to an enzyme immunoas-



say (EIA) recognizing 14 different high-risk HPV types as described by Jacobs et al.(as above).

**Statistical analysis.** Associations between categorical variables were tested with Pearson's chi square test (or Fisher's exact test) and the Mantel-Haenzel Test. Correlations between ordinal variables were evaluated using the Spearman Rank Correlation Coefficient. For unsupervised hierarchical clustering of clinical cases and genes the inventors used the complete linkage aggregation method and the Manhattan distance function.

All statistical calculations were performed using SPSS, version 11.0, for Windows and Gene Expression Similarity Suite (<http://genome.tugraz.at/Software/Genesis/Genesis.html>).

## RESULTS

This study investigated cervicovaginal specimens sampled by intravaginal tampon application in patients without cervical dysplasia, patients with low-grade and high-grade SIL and patients with invasive cervical cancer for HPV DNA and aberrant methylation of 11 genes. High-risk HPV DNA was detected in 2/3, 21/31, and 3/5 in low-grade SIL, high-grade SIL and invasive cervical cancer, respectively (Table 3). Patients without cervical dysplasia showed no HPV infection. The three HPV-positive cervical cancers were large cell squamous cancers, whereas both HPV-negative cases were small cell cervical cancers. Differences in methylation of the investigated genes between the non-dysplasia group and the low-grade SIL group were not statistically significant. Therefore, the results from these two groups were combined and compared with the high-grade SIL and invasive cancer groups. An overview of the frequency of methylated genes is given in Table 3. All investigated genes except *GSTP1* and *SOCS2* were significantly more frequently methylated in high-grade SIL and/or invasive cancer in comparison to the non-dysplasia/low-grade SIL group. *CDH1* and *SOCS2* were found to be methylated in nearly a quarter of the non-dysplasia/low-grade SIL patients whereas *hTERT* was methylated exclusively in specimens obtained from cervical cancer patients. No methylated genes were found in 61% and 42% of the cervicovaginal specimens from patients with non-dysplasia/low-grade SIL and high-grade SIL, respectively, whereas cervical cancer patients revealed five or more methylated genes in each investigated sample. The percentage of methylation-positive samples showed a significantly increasing trend from non-dysplasia/low-grade SIL to invasive cervical cancer, as shown in Fig. 5. No significant correlation between HPV positivity and aberrant hypermethylation was observed ( $p = 0.295$ ,

Fisher's exact test). HPV DNA-positive samples and/or at least one methylated gene were found in 46% (7/13; non-dysplasia/low-grade SIL), 94% (29/31; high-grade SIL), and 100% (5/5, invasive cancer) of samples (Table 3).

Two clusters were formed by unsupervised hierarchical cluster analysis using solely information on the DNA methylation of the 11 genes tested. One of the two clusters contained all five invasive cancers as well as two high-grade SILs (Fig. 3).

*hTERT* was never found to be methylated in cervical intraepithelial neoplasias, whereas 80% of the specimens obtained from cervical cancer patients were methylated. This finding suggests that methylation of *hTERT* is a late event in cervical carcinogenesis. *SOCS2* and *CDH1* were methylated in nearly a quarter of patients from the non-dysplasia/low-grade SIL groups, indicating that methylation of these genes is an early event in cervical carcinogenesis. Our results clearly show that an increasing percentage of methylation-positive samples is associated with increasing pathological changes of the cervix uteri (Fig. 5), suggesting that methylation, in addition to HPV infection, is an important factor in cervical carcinogenesis. HPV DNA-positive samples and/or at least one methylated gene were found in more than 90% of samples from patients with high-grade SIL and in 100% of patients with invasive cervical cancer. No significant correlation between HPV positivity and aberrant hypermethylation was observed. It can be speculated that aberrant methylation in women with or without HPV infection may help identify subgroups at increased risk for histological progression or cancer development. Our study shows that it is possible to detect HPV and aberrant hypermethylation of various genes in DNA from tampon-collected samples. The inventors were able to identify all invasive cervical cancers. Both methods combined detect a high percentage of high-grade cervical lesions.

### Example 3

In the following study the inventors investigated the methylation status of *CDH1* and *CDH13* in serum samples of cervical cancer patients for their utility as prognostic markers.

#### *Patients and Samples*

A total of 93 patients with invasive cervical cancer (age 26-96 years, median 52 years), all treated at the Department of Obstetrics and Gynecology, Innsbruck University Hospital, between 1990 and 1998 were included in this study. Serum samples were taken on the date of

diagnosis and before initial treatment. These serum samples were taken from a prior study investigating the presence of serum human papillomavirus DNA in cervical cancer patients.

Major clinical and histopathological characteristics of patients are given in Table 4. Treatment was according to international standards. None of the patients received concurrent chemotherapy and radiotherapy. All patients were followed up after primary treatment at our department, namely at intervals increasing from three months to one year until death or end of the study. The follow-up period ranged from one month to 12.4 years (median 3.5 years).

#### *DNA isolation and methylation analysis*

Serum samples (300µl) were treated with SDS and proteinase K (300µl of 1% SDS, 500µg/ml proteinase K) at 55°C overnight, followed by phenol/chloroform extraction and ethanol precipitation of DNA. The DNA was re-suspended in 80µl LoTE buffer (30mM Tris and 0.3mM EDTA). Sodium bisulfite conversion of genomic DNA was performed as described previously.<sup>12</sup> Sodium bisulfite-treated genomic DNA was analysed by means of the MethyLight, a fluorescence-based, real-time PCR assay, as described previously. Briefly, two sets of primers and probes, designed specifically for bisulfite-converted DNA, were used: a methylated set for the gene of interest and a reference set, *β*-actin (*ACTB*), to normalize for input DNA. Specificity of the reactions for methylated DNA was confirmed separately using *SssI* (New England Biolabs)-treated human white blood cell DNA (heavily methylated). The percentage of fully methylated molecules at a specific locus was calculated by dividing the *GENE:ACTB* ratio of a sample by the *GENE:ACTB* ratio of *SssI*-treated white blood cell DNA and multiplying by 100. The abbreviation PMR (percentage of fully methylated reference) indicates this measurement. For each MethyLight reaction 10µl of bisulfite-treated genomic DNA were used. A gene was deemed methylated if the PMR value was > 0. To verify the reproducibility of each assay the normalized value (*Gene: ACTB*) of the standard sample was compared between the different PCR runs. The following primers and probes were used for MethyLight reactions: *CDH1*: 5'-AATTTTAGGTTAGAGGGTTATCGCGT-3' SEQ ID NO: 58 (forward primer), 5'-TCCCCAAAACGAACTAACGAC-3' SEQ ID NO: 59 (reverse primer), 5'-FAM-CGCCCACCCGACCTCGCAT-BHQ-1-3' SEQ ID NO: 60 (probe); *CDH13*: 5'-AATTCGTTCGTTTTGTGCGT-3' SEQ ID NO: 61 (forward primer), 5'-CTACCCGTACCGAACGATCC-3' SEQ ID NO: 62 (reverse primer), 5'-FAM-AACGCAAAACGCGCCCGACA-BHQ-1-3' SEQ ID NO: 63 (probe).

### *Statistical analysis*

Associations between categorical variables were tested with Pearson's chi square test. The Kaplan-Meier method was used for univariate survival analysis, and the log rank test was used to assess the difference between survival curves. Cox's proportional hazards analysis was used to estimate the prognostic effects of various variables. A P value of less than 0.05 was considered statistically significant. These statistical calculations were performed using SPSS, version 11.0, for Windows.

## **RESULTS**

Aberrant promoter hypermethylation of *CDH1* and *CDH13* was observed in 42% (39 out of 93) and 4% (4 out of 93), respectively (Table 4). Three of the *CDH13* methylation positive serum samples also revealed *CDH1* methylation. The inventors therefore collapsed *CDH1* and/or *CDH13* methylation for further analysis. *CDH1* methylation was predominantly observed in FIGO stage III, whereas distribution of *CDH1* and *CDH13* methylation within the other clinical and histopathological parameters showed no significant differences (Table 4).

To determine whether any prognostic significance was attached to differences in *CDH1* and/or *CDH13* methylation, the inventors compared the clinical outcome of cervical cancer patients with *CDH1/CDH13* methylation status. A trend to poorer overall survival for patients with methylated *CDH1/CDH13* was observed ( $P = 0.09$ ) (Figure 7B). Cervical cancer patients with unmethylated *CDH1/CDH13* in serum samples taken before treatment revealed a statistically significant better disease-free survival in comparison to patients with methylated *CDH1/CDH13* ( $P = 0.03$ ) (Figure 7A). Median disease-free survival for *CDH1/CDH13* methylation negative and positive patients was 4.3 years and 1.2 years, respectively.

To assess independent prognostic significance a Cox proportional hazard model analysis was performed including tumor stage, histology, grade of differentiation, age and *CDH1/CDH13* methylation status. In addition to tumor stage and age only *CDH1/CDH13* methylation status ( $P = 0.005$ ) turned out to be of independent prognostic significance for disease-free and overall survival in cervical cancer patients (Tables 5 and 6). Serum *CDH1/CDH13* methylation positive patients had a more than twofold risk for relapse and death than did *CDH1/CDH13* methylation negative patients.

Distribution of *CDH1* and *CDH13* methylation within the clinical and histopathological parameters showed no significant differences except *CDH1* methylation was predominantly observed in advanced FIGO stage. Therefore, no difference in *CDH1* methylation according to FIGO stage could be observed. The higher methylation frequency of *CDH1* with increasing tumor stage and the association of *CDH1* and *CDH13* methylation in serum samples with enhanced relapse frequency in our study confirms these results. Up to now it has not been investigated whether one of the above mentioned mechanisms alone or a combination of these mechanisms causes loss of cadherin expression. DNA recovered from plasma or serum of patients with various malignancies reflects tumor-specific genetic and epigenetic alterations like methylation of the primary tumor (Ziegler A, Zangemeister-Wittke U, Stahel RA. Circulating DNA: a new diagnostic gold mine? Cancer Treat Rev 2002;28:255-71.). The simple procedure of blood drawing in combination with a high-throughput analysis like MethyLight opens a feasible approach for a possible routine use of these markers. Inactivation of the cadherin-mediated cell adhesion system, caused by aberrant methylation, is a common finding in human cancers. Therefore, investigation of *CDH1* and *CDH13* methylation as a prognostic parameter in serum samples from patients with various malignancies could be of interest. Our study revealed that *CDH1/CDH13* methylation is an independent prognostic parameter for both disease free and overall survival in cervical cancer patients.

Table 1: Primers and probes used according to Example 1

HUGO Gene Nomenclature	Forward Primer Sequence	Reverse Primer Sequence	Probe Oligo Sequence
ACTB	TGGTATGAGGAGGTTAGTAAAGT	AACCAATAAAACCTACTCTCTCCCTTAA	6FAM-ACCACACCCACACACACATTAACAACACA-BHQ-1
APC	GAACCAAAACGCTCCCAT	TTATATGTGCTGTTACGTGGTTTATAT	6FAM-CCCCTGCGAAAAACCGCCGATTABHQ-1
ARH1	GCGTAAGCGGAATTTATGTTTGT	CCGGAGTTTATATTCGAGCTT	6FAM-CGCACAAAAACGAAATACGAAAAACGCAAA-BHQ-1
BLT1	GCGTTGTTTATCGGAAGG	AAACGGTAATTCGCGCTCG	6FAM-GACTCCGCGCAACTTCGCGCAAAA-BHQ-1
BRCA1	GAGAGGTTGTTTATAGCGGTAGT	CGCGCAATCGCAATTTTAAT	6FAM-CCGCGCTTTTCCGTTACCAACGA-BHQ-1
CALCA	GTTTGGAGTATGAGGGTGACG	TTCCGCGCGCTATAAATCG	6FAM-ATTCCGCAATACACAAACCAATTAACG-BHQ-1
CDH1	AATTTAGGTTAGAGGGTTATCGGT	TCGCCAAACGAACTAACGAC	6FAM-CCGCAACCGCACTCGCAT-BHQ-1
CDH13	AATTTGTTTCTTTTGTGGT	CTACCGTACCGAAGATCC	6FAM-AACGCAAAACGCGCGCGCA-BHQ-1
CDKN2A	TGGAGTTTTCGGTTGATGGTT	AACAACGCGCGCACTCTCT	6FAM-ACCGCAACCGCAACCGCG-BHQ-1
CYP11B1	GTGCGTTTGGACGGAGTT	AACGCGCTAACCAAAAGAA	6FAM-CCGCGCACACCAACCGCTT-BHQ-1
DAPIK1	TGTCGTGCTTTCGGTTAGTT	TCGCTCGAAACGCTATCG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
ESR1	GGCGTTGTTTGGGATG	GGGACACGCGAACTCTAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
ESR2	TTTGAAATTTAGGGCGAAGAGTAG	AACGCTGCGCACTCGAATAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
FGF18	ATCTCTCTCTCGCGCTCTCT	TCGCGCTAGAAACGCTT	6FAM-CCGCGCACACCAACCGCG-BHQ-1
GSTM3	GCG CGA ACG CCC TAA CT	AAC GTC GGT ATT AGT CGC GTT T	6FAM-CCGCGCACACCAACCGCG-BHQ-1
GSTM1	GTGCGGTGCTGATTTAGTATG	AACTACGACGACGAACTCCAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
HIC1	GTTAGCGGTTAGGGGCTC	CCGACGCGCTCCATCGTAT	6FAM-CCGCGCACACCAACCGCG-BHQ-1
HLA-G	CAC CCC CAT ATA CGC GCT AA	GGT CGT TAC GTT TCG GGT AGT TTA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
HSD17B4	TATGTTGAGGTTGCAAGGG	TCGCTTTCGCTTCCCTTAAAG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
HSPA2	CAC GAA CAC TAC CAA CAA CTC AAC T	GGG AGC GGA TTG GGT TTG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
IGFBP2	CTC GCG CCG ACA AAT AAA TAC	CGG GAA GAG TAG GGA ATT TTT AGA GT	6FAM-CCGCGCACACCAACCGCG-BHQ-1
MGMT	GCGTTTGGAGGTTGCTAGGT	CACCTCTTCCGAAACGAAAG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
MILH1	AGGAAGAGGAGTAGCGATT	TCCTGCTCCCTCCCTTAAAG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
MILL7	CCT CAC GAT ACC TCC CCT CAA	TTA GGG ATT AGC GTT TTG GGA TT	6FAM-CCGCGCACACCAACCGCG-BHQ-1
MT3	CGA TAA ACG AAC TTC TCC AAA CAA	GCG CGG TGC GTA GGG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
MYOD1	GAGCGCGGTAGTAGCG	TCGACACGCGCGCTTCC	6FAM-CCGCGCACACCAACCGCG-BHQ-1
PGR	TTATAATCGAGGCGGTAGTGT	TCGAACTTCTACTAAGTCCGTAACGA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
PPP1R13B	CCT CAC CCA CCG ACA TCA TC	TCG GAG CCG TGG GTA TAG TTC	6FAM-CCGCGCACACCAACCGCG-BHQ-1
PTGS2	CGGAAGCGTTGCGGTAAG	AATTCACCGCGCGCAAC	6FAM-CCGCGCACACCAACCGCG-BHQ-1
RASSF1A	ATTGAGTTGCGGAGTTGGT	ACACGCTCCACCGCAATACG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
SOC1	GCGTCAGTTGCGGATTT	CCGAAACCATCTTCAAGCTAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
SOC2	TCC CTT CCG CGC CAT T	TTG TTT TTG TCG CGG TGA TTT	6FAM-CCGCGCACACCAACCGCG-BHQ-1
SYK	GGGCGGATATTGGAG	GCGACTCTTCTCATTTTAAACAC	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TER1	GGATTGCGGGTATAGAGTT	CGAAATTCGCGCGAAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TFP1	TAAGGTTACGTTGGTTATTTGTTGA	ACCTTAATCCAAATCTACTCATATCTAAAA	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TIMP3	GCGTCGAGGTTAGGTTGTT	CTCTCCAAATTAACGTAACGCG	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TITF1	CGA AAT AAA CCG AAT CCT CCT TAA	TGT TTT GTT GTT TTA GCG TTT ACG T	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TP53BP2	ACC CCC TAA CCG GAC TTT ATC	GTT CGA TTC GGG ATT AGT TGG T	6FAM-CCGCGCACACCAACCGCG-BHQ-1
TP53	GTAGCGCGCGCAAGCT	AAACGCAACGCAATCAATAACCAAC	6FAM-CCGCGCACACCAACCGCG-BHQ-1

Table 2: Primers and probes used according to Example 2

Gene	Forward Primer	Reverse Primer	Probe
<i>SOC</i>	GCGTCGAGTTCGTGGG	CCGAAACCATCTTCA	6FAM-
<i>SI</i>	TATTT	CGCTAA	ACAATTCCGCTAACGACTATCGCC
<i>CDH</i>	AATTTTAGGTTAGAGG	TCCCCAAAACGAAAC	6FAM-CGCCCCACCCGACCTCGCAT
<i>1</i>	GTTATCGCGT	TAACGAC	BHQ-1
<i>TIMP</i>	GCGTCGGAGGTTAAGG	CTCTCCAAAATTACC	6FAM-AACTCGCTCGCCCCGCCGAA
<i>3</i>	TTGTT	GTACGCG	BHQ-1
<i>GST</i>	GTCGGCGTCGTGATTT	AAACTACGACGACG	6FAM-
<i>P1</i>	AGTATTG	AAACTCCAA	AAACCTCGCGACCTCCGAACCTTA
<i>DAP</i>	TCGTCGTCGTTTCGGTT	TCCCTCCGAAACGCT	6FAM-
<i>K1</i>	AGTT	ATCG	CGACCATAAACGCCAACGCCG-
<i>hTER</i>	GGATTCGCGGGTATAG	CGAAATCCGCGCGAA	6FAM-
<i>T</i>	ACGTT	A	CCCAATCCCTCCGCCACGTAAAA-
<i>CDH</i>	AATTCGTTCGTTTTGT	CTACCCGTACCGAAC	6FAM-
<i>13</i>	GCGT	GATCC	AACGCAAAACGCGCCCGACA-
<i>HSP</i>	CACGAACACTACCAAC	GGGAGCGGATTGGGT	6FAM-
<i>A2</i>	AACTCAACT	TTG	CCGCGCCCAATTCCCGATTCT-
<i>MLH</i>	AGGAAGAGCGGATAG	TCTTCGTCCCTCCCTA	6FAM-
<i>1</i>	CGATTT	AAACG	CCCGCTACCTAAAAAAATATACG
<i>RASS</i>	ATTGAGTTGCGGGAGT	ACACGCTCCAACCGA	6FAM-CCCTTCCCAACGCGCCCA-
<i>F1A</i>	TGGT	ATACG	BHQ-1
<i>SOC</i>	TCCCTTCCCCGCCAT T	TTGTTTTTGTGCGGGT	6FAM-
<i>S2</i>		GATTT	CCGAAAAACTCAAAACACCGCA
<i>ACT</i>	TGGTGATGGAGGAGGT	AACCAATAAAACCTA	6FAM-
<i>B</i>	TTAGTAAGT	CTCCTCCCTTAA	ACCACCACCAACACACAATAAC
			AAACACA-BHQ-1

**Table 2** Methylated genes and high-risk HPV DNA in patients with no dysplasia/low-grade SIL, high-grade SIL and invasive cervical cancer

Variables	No dysplasia/low-grade SIL n=13	High-grade SIL n=31	Invasive Cancer n=5	p
<b>Genes</b>				
<i>SOCS1</i> methylated	0%	7%	60%	< 0.001 (*)
<i>CDH1</i> methylated	23%	39%	100%	0.011 (*)
<i>TIMP3</i> methylated	0%	16%	100%	< 0.001
<i>GSTP1</i> methylated	0%	7%	20%	0.282
<i>DAPK</i> methylated	8%	23%	80%	0.006 (*)
<i>hTERT</i> methylated	0%	0%	80%	< 0.001 (*)
<i>CDH13</i> methylated	8%	13%	100%	< 0.001 (*)
<i>HSPA2</i> methylated	0%	3%	60%	< 0.001 (*)
<i>MLH1</i> methylated	0%	3%	40%	0.004
<i>RASSF1A</i> methylated	8%	0%	40%	0.002
<i>SOCS2</i> methylated	23%	45%	60%	0.26
At least one gene methylated	39%	58%	100%	0.06
High-risk HPV DNA positive	15%	68%	60%	0.006
At least one gene methylated and/or high-risk HPV DNA-positive	46%	94%	100%	0.001

**TABLE 4** - Methylation of *CDH1* and *CDH13* in serum samples of cervical cancer patients

Characteristics	n <sup>a</sup>	CDH1	CDH13
<b>Stage</b>			
FIGO I	23	30%	0%
FIGO II	24	29%	4%
FIGO III	33	67% <sup>b</sup>	6%
FIGO IV	13	23%	8%
<b>Tumor grade</b>			
1	22	50%	0%
2	50	34%	6%
3	16	56%	6%
<b>Histology</b>			
squamous	84	42%	5%
adeno/adenosquamous	9	44%	0%
<b>Age</b>			
< 50	38	36%	5%
≥ 50	55	46%	4%
<b>Total</b>	93	42%	4%



Tumor grade was unknown in five cases

<sup>a</sup> n, number of cases examined.

<sup>b</sup> P = 0.005 (chi<sup>2</sup> test)

**TABLE 5 - Multivariate analysis for risk of relapse**

Variable	Relative risk of relapse (95% CI)	P value
Stage		<b>&lt;0.001</b>
FIGO II (vs. FIGO I)	0.6 (0.2-1.6)	0.316
FIGO III (vs. FIGO I)	1.3 (0.6-2.9)	0.524
FIGO IV (vs. FIGO I)	8.6 (3.3-22.3)	<b>&lt;0.001</b>
Tumor grade		0.132
grade 2 (vs. grade 1)	1.9 (0.9-4.2)	0.092
grade 3 (vs. grade 1)	2.1 (0.9-4.8)	0.065
Histology		
squamous (vs. adeno/adenosquamous)	0.6 (0.2-1.7)	0.303
Age	0.97 (0.95-0.99)	<b>0.012</b>
<i>CDH1</i> and/or <i>CDH13</i> methylated (vs. unmethylated)	2.5 (1.3-4.6)	<b>0.005</b>

**TABLE 6 - Multivariate analysis for overall survival**

Variable	Relative risk of death (95% CI)	P value
Stage		<b>&lt;0.001</b>
FIGO II (vs. FIGO I)	0.7 (0.3-1.8)	0.504
FIGO III (vs. FIGO I)	1.0 (0.4-2.5)	0.993
FIGO IV (vs. FIGO I)	11.1 (4.0-30.4)	<b>&lt;0.001</b>
Tumor grade		0.07
grade 2 (vs. grade 1)	2.3 (1.1-5.0)	<b>0.037</b>
grade 3 (vs. grade 1)	2.5 (1.0-6.1)	<b>0.041</b>
Histology		
squamous (vs. adeno/adenosquamous)	1.3 (0.4-4.3)	0.645
Age	1.0 (0.9-1.0)	0.146
<i>CDH1</i> and/or <i>CDH13</i> methylated (vs. unmethylated)	2.5 (1.3-4.8)	<b>0.005</b>

Table 7: Genes and equivalent sequences according to the invention.

Gene/Associated gene	Genomic sequence SEQ ID NO:	Converted sequence SEQ ID NO:
CDH1	1	12, 13, 34 and 35
CDH13	2	14, 15, 36 and 37
RASSF1A	3	16, 17, 38 and 39
hMLH1	4	18, 19, 40 and 41
HSPA2	5	20, 21, 42 and 43
SOCS1	6	22, 23, 44 and 45
SOCS2	7	24, 25, 46 and 47
GSTP1	8	26, 27, 48 and 49
DAPK1	9	28, 29, 50 and 51
TIMP3	10	30, 31, 52 and 53
hTERT	11	32, 33, 54 and 55

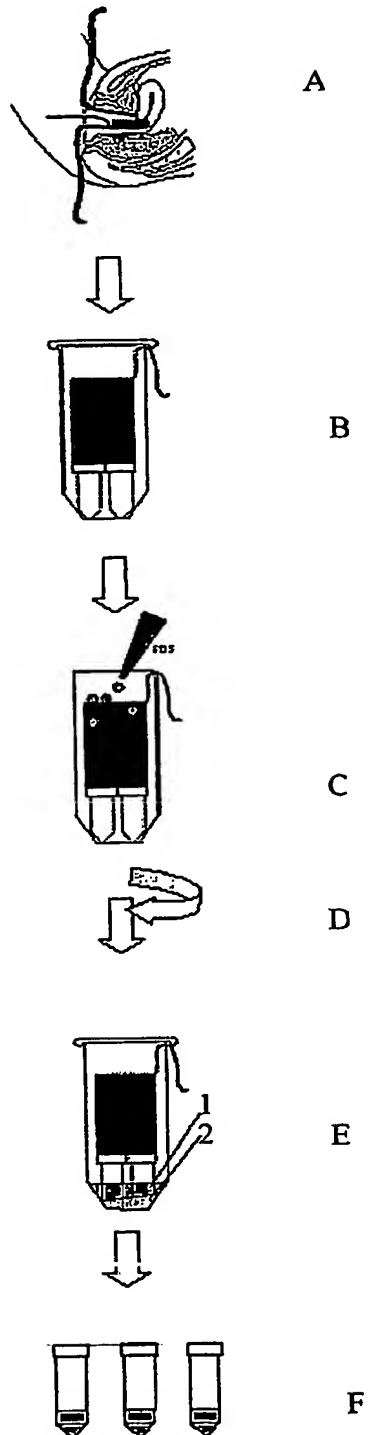
### Claims

1. A method for the detection, differentiation and prognosis of a gynaecological cell proliferative disorder comprising the following steps:
  - a) obtaining a cervicovaginal secretion specimen from an individual
  - b) determining the methylation status of at least one or more CpG positions
  - c) determining from said methylation status the presence, classification and/or prognosis of a gynaecological cell proliferative disorder in said individual.
2. The method according to claim 1 wherein said CpG positions are selected from one or more genes taken from the group consisting of CDH1, CDH13, RASSF1A, hMLH1, HSPA2, SOCS1, SOCS2, GSTP1, DAPK, TIMP3 and hTERT.
3. The method according to claim 1 wherein said CpG positions are selected from one or more genes taken from the group consisting of SEQ ID No: 1 to SEQ ID No: 11.
4. A method according to claim 1 wherein in step a) the specimen is obtained by one or more of the following methods gynaecological swab, aspiration, cervicovaginal lavage and tampon based collection.
5. The method according to claims 1 and 2 wherein the gynaecological cell proliferative disorder is selected from the group consisting no dysplasia or low grade squamous intraepithelial lesions, high-grade squamous intraepithelial lesions, cervical cancer, endometrial cancer and grade 1 to 3 cervical intraepithelial neoplasia.
6. The method according to claim 1 wherein hypermethylation of said genes correlates with bad prognosis.
7. The method according to claim 1 wherein step b) comprises the following steps
  - a) treating the genomic DNA, or a fragment thereof, with one or more reagents to convert 5-position unmethylated cytosine bases to uracil or to another base that is detectably dissimilar to cytosine in terms of hybridization properties;

- b) contacting the treated genomic DNA, or the treated fragment thereof, with an amplification enzyme and at least two primers comprising, in each case a contiguous sequence at least 9 nucleotides in length that is complementary to, or hybridizes under moderately stringent or stringent conditions to a target nucleic acid, and
  - c) determining, based on a presence or absence of, or on a property of said amplificate, the methylation state of at least one CpG dinucleotide sequence, or an average, or a value reflecting an average methylation state of a plurality of CpG dinucleotide sequences, whereby at least one of detecting a gynecological cell proliferative disorder, or distinguishing between gynecological cell proliferative disorders is, or providing a prognosis at least in part, afforded.
8. The method according to claim 7 wherein in step ii) the target nucleic acid is selected from SEQ ID No: 12 to SEQ ID No: 33.
9. A kit useful for detecting, or for detecting distinguishing between or among gynecological cell proliferative disorders of a subject, comprising:  
at least one of a bisulfite reagent, or a methylation-sensitive restriction enzyme; and  
at least one nucleic acid molecule or peptide nucleic acid molecule comprising, in each case a contiguous sequence at least 9 nucleotides that is complementary to, or hybridizes under moderately stringent or stringent conditions to a sequence selected from the group consisting of SEQ ID 12 to SEQ ID NO 55; and complements thereof.
10. The kit of claim 9, further comprising standard reagents for performing a methylation assay selected from the group consisting of MSP, MethyLight and HeavyMethyl and combinations thereof.

**Abstract**

The present invention relates to a method for the detection, differentiation and prognosis of a gynaecological cell proliferative disorder, comprising the following steps: a) obtaining a cervicovaginal secretion specimen from an individual b) determining the methylation status of at least one or more CpG positions c) determining from said methylation status the presence, classification and/or prognosis of a gynaecological cell proliferative disorder in said individual. The present invention further relates to a kit for performing said method.

Figure 1

2/19

Figure 2

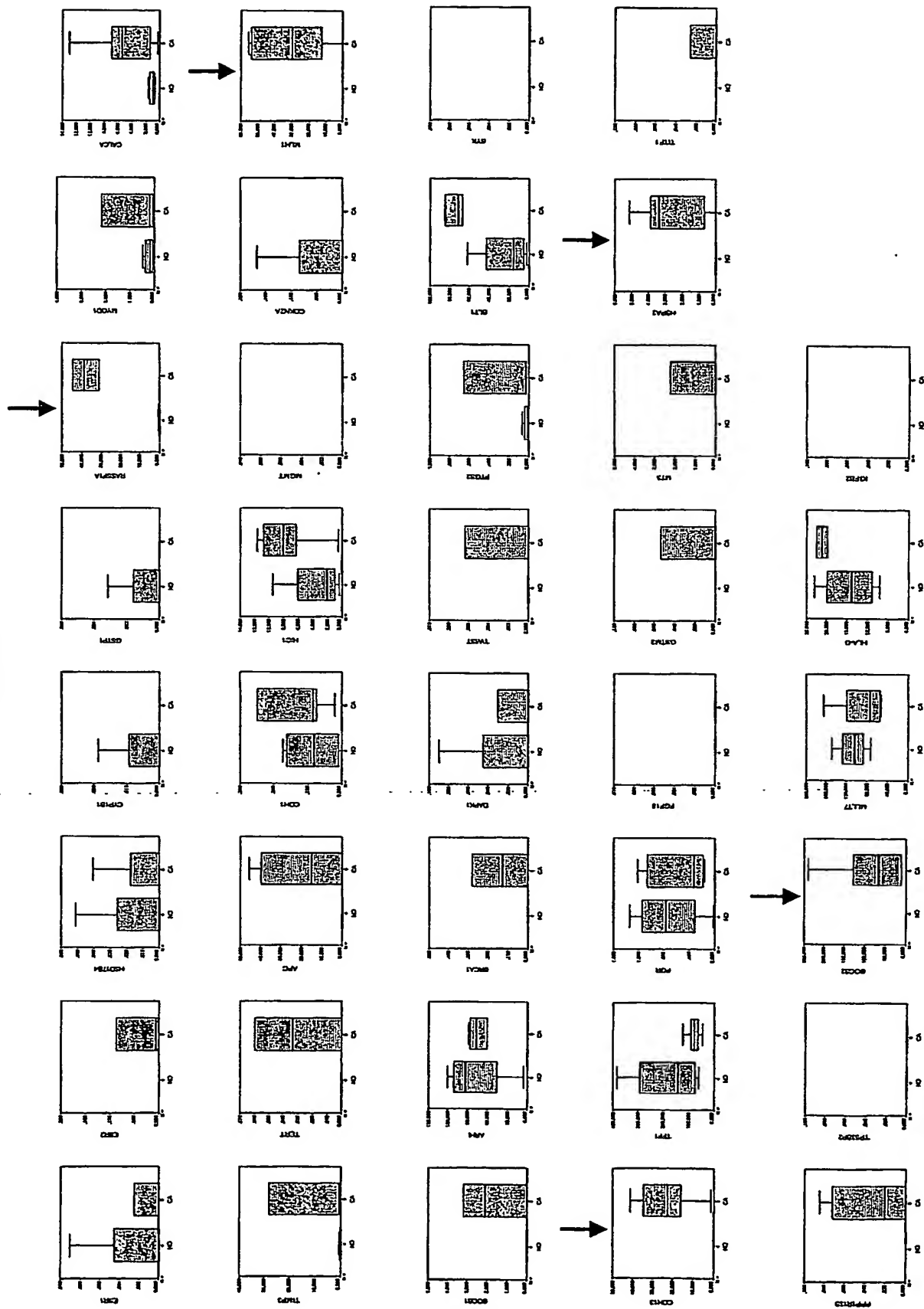


Figure 3

Genes						Endometrial cancer/ no		Age (years)
cd	hs	ml	ras	so		cancer		
					endometrial			
					cancer		51	
					endometrial			
					cancer		52	
					endometrial			
					cancer		56	
					endometrial			
					cancer		60	
					endometrial			
					cancer		62	
					endometrial			
					cancer		62	
					endometrial			
					cancer		63	
					endometrial			
					cancer		65	
					endometrial			
					cancer		70	
					endometrial			
					cancer		72	
					endometrial			
					cancer		73	
					endometrial			
					cancer		75	



					endometrial cancer	76
					endometrial cancer	80
					endometrial cancer	84
					no endometrial cancer *	19
					no endometrial cancer	20
					no endometrial cancer *	21
					no endometrial cancer	22
					no endometrial cancer *	24
					no endometrial cancer	25
					no endometrial cancer	26
					no endometrial cancer	27
					no endometrial cancer *	28

					no endometrial cancer *	29
					no endometrial cancer	30
					no endometrial cancer	30
					no endometrial cancer	30
					no endometrial cancer	31
					no endometrial cancer	31
					no endometrial cancer	31
					no endometrial cancer	32
					no endometrial cancer	32
					no endometrial cancer †	32
					no endometrial cancer	33
					no	34

					endometrial cancer	
					no endometrial cancer	34
					no endometrial cancer	34
					no endometrial cancer	35
					no endometrial cancer	35
					no endometrial cancer	36
					no endometrial cancer	36
					no endometrial cancer	37
					no endometrial cancer	37
					no endometrial cancer	37
					no endometrial cancer *	39
					no endometrial	39

					cancer	
					no	
					endometrial	
					cancer	40
					no	
					endometrial	
					cancer	40
					no	
					endometrial	
					cancer	40
					no	
					endometrial	
					cancer	40
					no	
					endometrial	
					cancer	40
					no	
					endometrial	
					cancer	41
					no	
					endometrial	
					cancer	41
					no	
					endometrial	
					cancer	41
					no	
					endometrial	
					cancer	41
					no	
					endometrial	
					cancer	42

					no endometrial cancer	42
					no endometrial cancer	43
					no endometrial cancer	43
					no endometrial cancer	43
					no endometrial cancer	44
					no endometrial cancer †	44
					no endometrial cancer	45
					no endometrial cancer	45
					no endometrial cancer	45
					no endometrial cancer	46
					no endometrial cancer	47
					no	47

					endometrial	
					cancer *	
					no	
					endometrial	
					cancer	47
					no	
					endometrial	
					cancer *	47
					no	
					endometrial	
					cancer	48
					no	
					endometrial	
					cancer	48
					no	
					endometrial	
					cancer	48
					no	
					endometrial	
					cancer *	48
					no	
					endometrial	
					cancer	48
					no	
					endometrial	
					cancer	49
					no	
					endometrial	
					cancer	50
					no	
					endometrial	
					cancer	51
					no	
					endometrial	52

					cancer	
					no	
					endometrial	
					cancer	52
					no	
					endometrial	
					cancer	52
					no	
					endometrial	
					cancer	52
					no	
					endometrial	
					cancer *	53
					no	
					endometrial	
					cancer	54
					no	
					endometrial	
					cancer *	54
					no	
					endometrial	
					cancer	55
					no	
					endometrial	
					cancer	56
					no	
					endometrial	
					cancer	56
					no	
					endometrial	
					cancer	56
					no	
					endometrial	
					cancer	57

					no endometrial cancer	57
					no endometrial cancer	58
					no endometrial cancer	58
					no endometrial cancer	58
					no endometrial cancer	59
					no endometrial cancer	59
					no endometrial cancer	59
					no endometrial cancer	60
					no endometrial cancer	61
					no endometrial cancer †	61
					no endometrial cancer	61
					no	61



					endometrial cancer	
					no endometrial cancer	61
					no endometrial cancer	62
					no endometrial cancer	62
					no endometrial cancer *	62
					no endometrial cancer	62
					no endometrial cancer	63
					no endometrial cancer	63
					no endometrial cancer	64
					no endometrial cancer	64
					no endometrial cancer	67
					no endometrial	68

						cancer	
						no	
						endometrial	
						cancer	71
						no	
						endometrial	
						cancer	72
						no	
						endometrial	
						cancer	73
						no	
						endometrial	
						cancer	74
						no	
						endometrial	
						cancer †	75
						no	
						endometrial	
						cancer †	76
						no	
						endometrial	
						cancer *	77
						no	
						endometrial	
						cancer	81
						no	
						endometrial	
						cancer	81

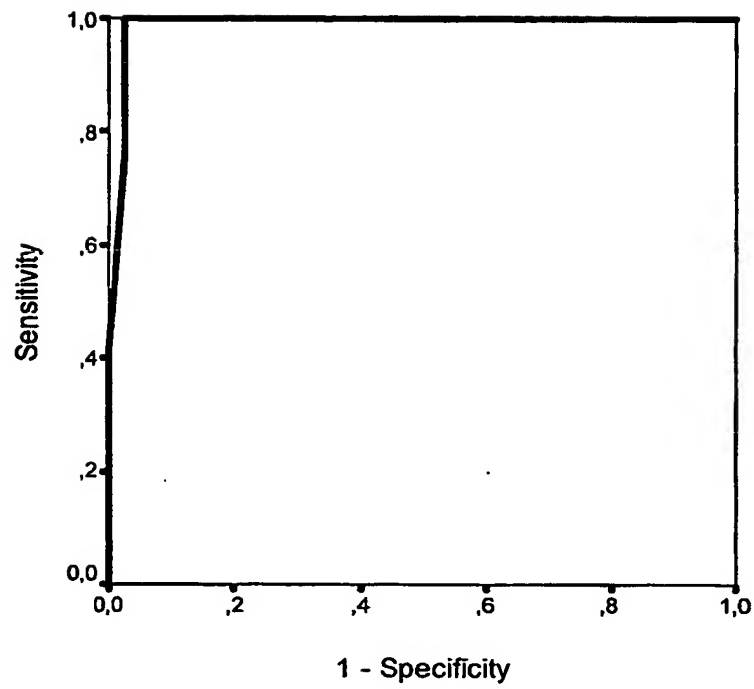
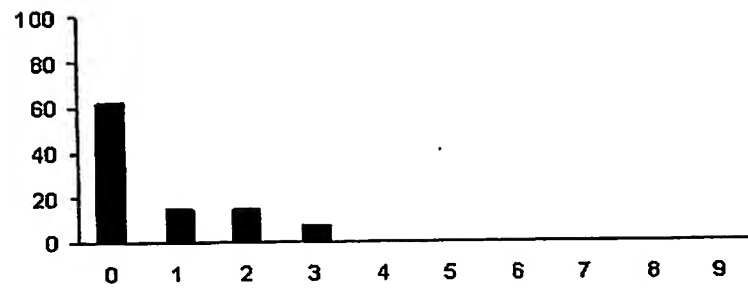
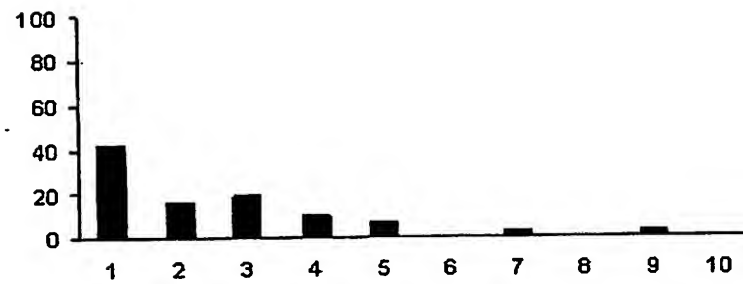
Figure 4

Figure 5

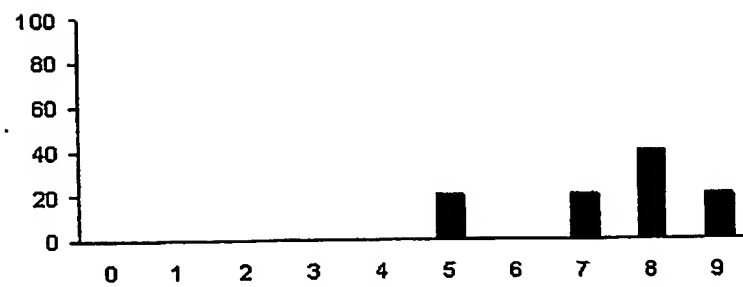
A



B



C



**Figure 6**

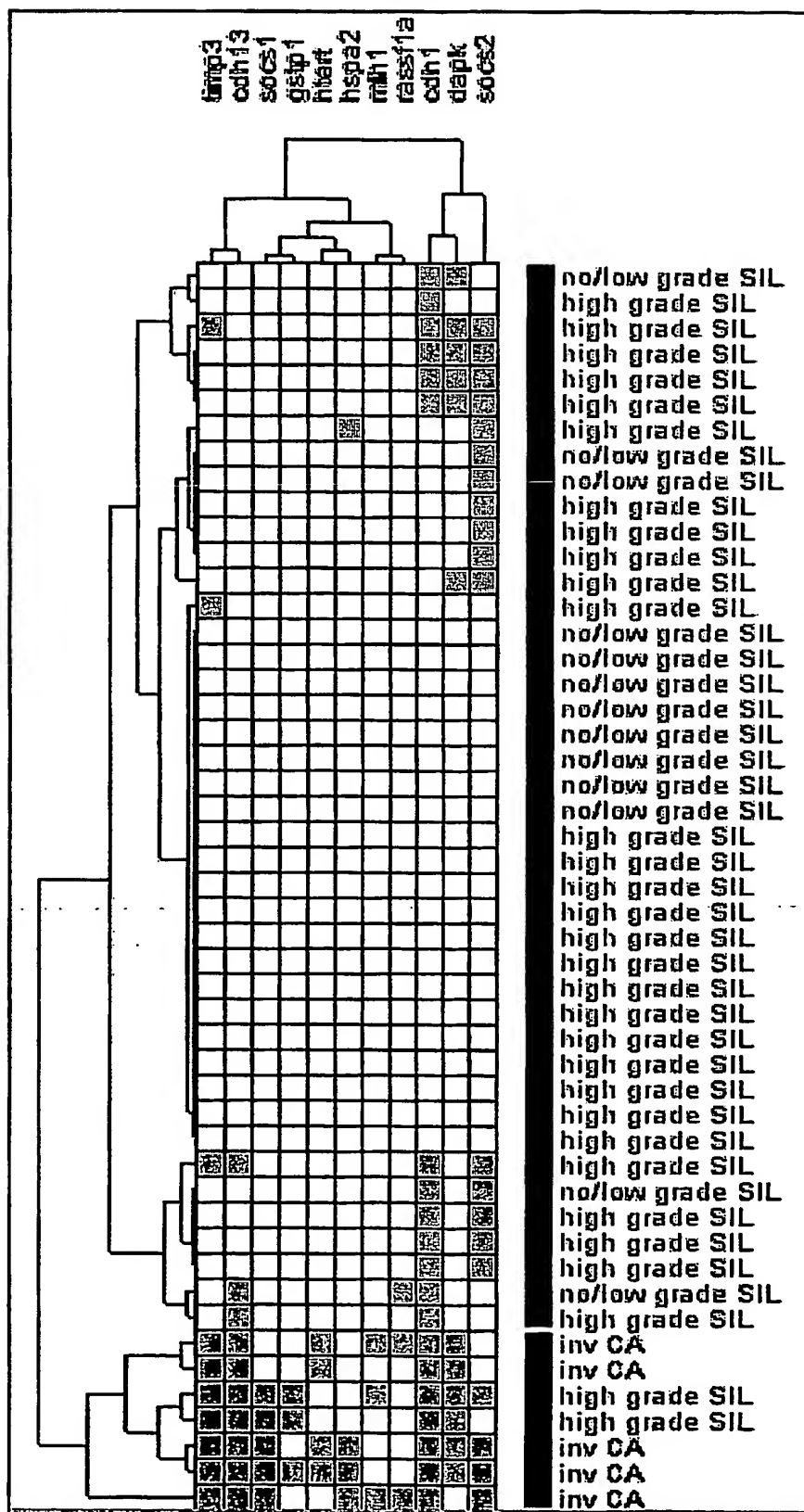
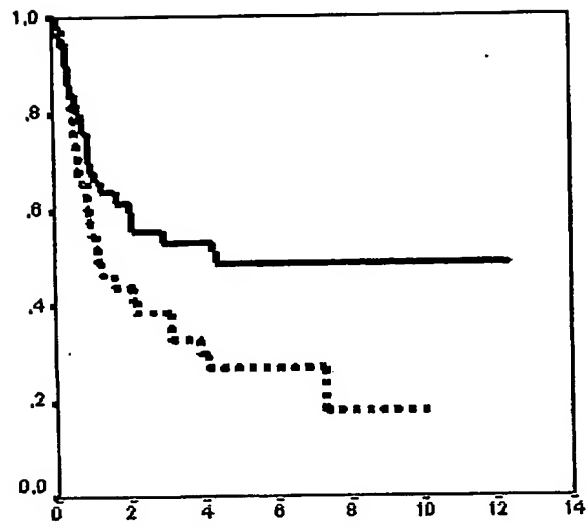


Figure 7

A



B

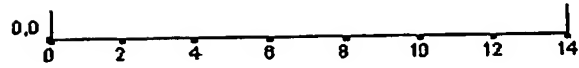


Figure 8

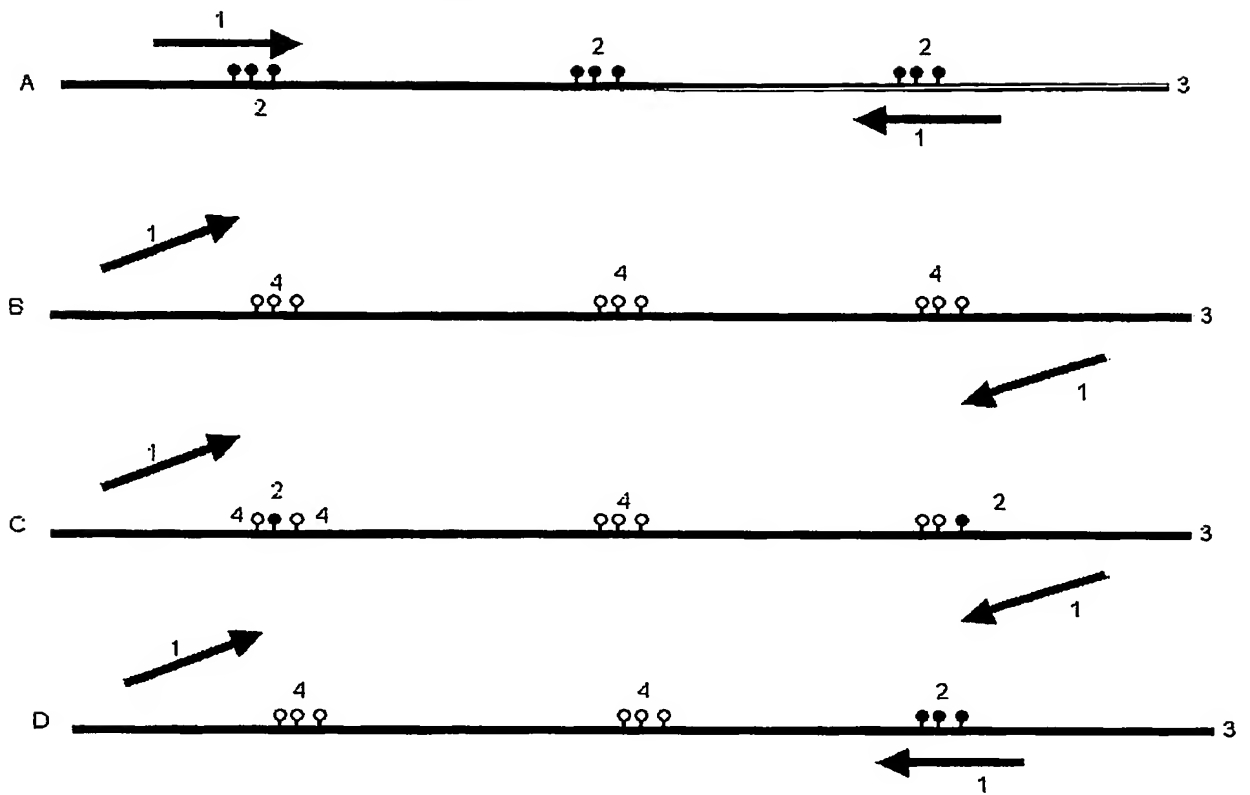
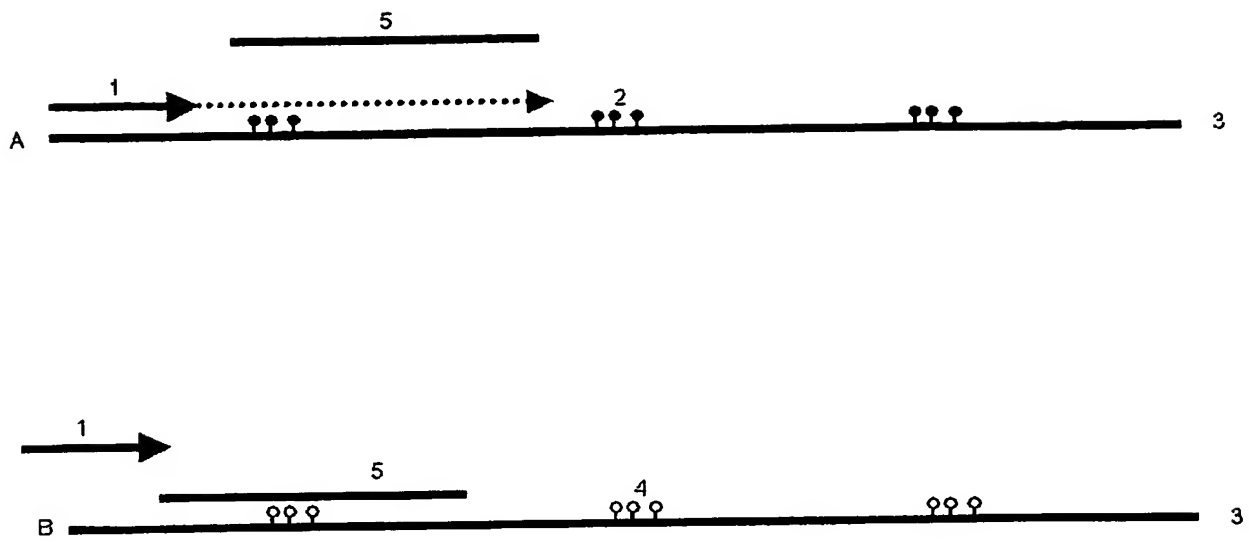


Figure 9





Sequence listing

<110> Epigenomics AG

<120> Method for the analysis of gynaecological cell proliferative disorders.

<160> 63

<210> 1

<211> 3190

<212> DNA

<213> Homo Sapiens

<400> 1

aggagttcaa	gaccagcctg	gccaacatga	tgaaacctg	tctctactaa	aaatacaaaa	60
attagccagt	cgtggtggcg	catgcctgta	atcccagcta	ctcaggaggc	tgatagagga	120
gaaccgcttg	aaccaagag	gcgaagggtg	cagtgaagca	agaacacacc	attgcactcc	180
agcctgggcg	acagagcagg	actccgtctc	aaaaaaaaaa	gagctggtca	gtgtcaaatg	240
cttagcacag	agactggcac	agtaatcttc	aatgtccagc	acctattgtt	actatTTTTT	300
TTTTTTTTTT	TTTTTTgaga	cagagtcttg	ctctgtcgcc	caggctggag	tacagtggcg	360
cgatctcggc	tcactgcaag	ctccacctcc	caggttcatg	ccattctcct	gcctcagcct	420
cccagtagc	tgggactaca	ggcgccacc	accacgcctg	gctaattttt	tgtatTTTTa	480
gtagagacgg	ggtttcaactg	cgtagccag	gatggtctca	atctcctgac	ctcgtgatct	540
gcccgcctcg	gcctcccaaa	gtgctgggat	tacaggcgtg	agccaccatg	cctggcccta	600
ttgttactat	TTTTaccct	cacttctgta	cagagcattt	atggtcaag	aaacatttgt	660
cattttaatt	gtatgggagt	cccacaacag	catagggaga	catttctgat	cattattccc	720
attaggaggg	tggagaaact	gaggctttgg	gagggtggtc	tgacctaggg	aatcaatttg	780
ctgactcact	aacctatgaa	gctctacagt	taaaaaaagac	tagattaaaa	aatgagaact	840
cagtaaaggg	gctgaggcag	gaggatcgcc	tgagttcaga	aatttgagat	cagcctcggc	900
aacatagtga	gatccccctc	ctagaaaaat	TTTTtaaaaa	attaggccgc	tccagggcaga	960
gtgcagtggc	tcacgcctgt	aatccaacac	ttcaggaggc	tgaagagggt	ggatcacctg	1020
aggtcaggag	ttccagacca	gcctggccaa	catggtgaaa	ccccgtctgt	actaaaaata	1080
caaaattagc	cgggtgtggtg	gcacacgcct	gtagtcccag	ctactcaata	ggctgagaca	1140
ggagagtctc	ttgaaccggg	caggcggagg	ttgcagttag	ccgagatcgt	gccactgcac	1200
tccagcctgg	gcaagacaga	gcgagactcc	gtctcaaaaa	atacaaaaaa	aacaaacaaa	1260
caaaaaatta	ggctgctagc	tcagtggctc	atggctcaca	cctgaaatcc	tagcactttg	1320
ggaggccaag	gcaggaggat	cgcttcagcc	caggagtctc	agaccaggct	gggcaataca	1380
gggagacaca	gcgccccac	tgcctctgtc	cgccccgact	tgtctctcta	caaaaaggca	1440
aaagaaaaaa	aaattagcct	ggcgtgggtg	tgtgcacctg	tactcccagc	tactagagag	1500
gctggggcca	gaggaccgct	tgagcccagg	agttcgaggc	tgacgtgagc	tgtgatcgca	1560
ccactgcact	ccagcttggg	tgaagagtg	agaccccatc	tccaaaacga	acaaacaaaa	1620
aatcccaaaa	acaaaaagaa	ctcagccaag	tgtaaaagcc	ctttctgatc	ccaggtctta	1680
gtgagccacc	ggcggggctg	ggattcgaac	ccagtggaat	cagaaccgtg	caggctccat	1740
aaccaccta	gaccctagca	actccaggct	agagggtcac	cgcgctctatg	cgaggccggg	1800
tgggcgggcc	gtcagctccg	ccctggggag	gggtccgcgc	tgctgattgg	ctgtggccgg	1860
cagggtgaacc	ctcagccaat	cagcggtacg	gggggcgggtg	cctccggggc	tcacctggct	1920
gcagccacgc	acccctctc	agtggcgctg	gaactgcaaa	gcacctgtga	gcttgcgga	1980
gtcagttcag	actccagccc	gctccagccc	ggcccgaacc	gaccgcaccc	ggcgctgccc	2040
ctcgtctggc	gtccccggcc	agccatgggc	ccttgaggcc	gcagcctctc	ggcgctgctg	2100
ctgctgctgc	aggtaccccc	gatccccctga	cttgcgaggg	acgcattcgg	ggcgcaagct	2160
ccgcgcccc	gccctgcgcc	ccttctctc	ccgtcgtcac	cgcttccctt	cttccaagaa	2220
agttcgggtc	ctgaggagcg	gagcggcctg	gaagcctcgc	gcgctccgga	ccccccagt	2280
attgggagtg	gggggtgggtg	gtgaggggcg	agcgcggtt	tctgcccc	tccagcgag	2340
accgaggcg	ggcggtcttg	ccgcggagtc	cgcggggtg	gctcgcgcg	gcgggtgggg	2400
cgtgaagcgg	gggtgtaggg	gtgggggtgtg	gagaaggggt	gccctggtgc	aagtcgagg	2460
ggagccagga	gtcgtgggga	cgatcttcga	gggaaggaga	ggggcatccg	tagaaataaa	2520
ggcacctgcc	atgccaaagaa	aggtcgtaaa	taggagtgag	ggtcccgggg	ataagaaagt	2580
gaggtcggag	gaggtgggag	cgccccctgc	tctgaggagt	ggtgcattcc	cggctcaagg	2640
aaagtgggg	actgggagaat	aaagacatct	ccaataaaat	gagaaaggag	actgaaagg	2700
aacgggtggc	taggtcttga	gggggtgact	cggcggcccc	ctcccgggg	ttcctgggg	2760
ctcggcggcc	gtaggtttcg	gggtggggga	gggtgacgtc	gctgcccggc	cgtcccgggg	2820

ctgcgggctg	gggtcctccc	ccaatcccg	cgcggggagc	gagggagggg	cggcgctgtt	2880
ggtttcgggtg	agcaggagg	aaccctccga	gtcaccocgt	tccatctacc	tttccccac	2940
cccagggtctc	ctcttggtc	tgccaggagc	cggagccctg	ccaccctggc	tttgacgcog	3000
agagctacac	gttcacgggtg	ccccggcgcc	acctggagag	aggccgcgtc	ctgggcagag	3060
gtgagggcgc	gctgccgggtg	tccctgggcg	gagtagggag	gggttgga	ggggccgaga	3120
aattgcactc	ccacacccct	gggttgcaat	gggcaagctc	cctccttggc	tcaaacgaca	3180
ccccttgga						3190

<210> 2

<211> 2301

<212> DNA

<213> Homo Sapiens

<400> 2

gccgccagtc	ccccgtgcaa	ttccattctc	tggaaaagtg	gaatcagctg	gcattgcccc	60
gcgtgatttg	tgaggctgag	ccccaacagt	ccaaagaagc	aaatgggatg	ccacctccgc	120
ggggctcgct	cctcgcgagg	tgctcacccc	gtatctgcc	tgcaaaacga	gggagcgtaa	180
ggaaggaatc	cgtcttgtaa	agccattggt	cctggtcac	agcctctacc	caatgctttc	240
gtgatgctgc	tgctgatcta	tttgggaagt	tggctggctg	gcgaggcaga	gcctctcctc	300
aaagcctggc	tcccacggaa	aatatgctca	gtgcagccgc	gtgcatgaat	gaaaacgccg	360
ccgggcgctt	ctagtcggac	aaaatgcagc	cgagaactcc	gctcgttctg	tgcttctctc	420
tgtcccaggt	aggggaagag	ggctgccggg	cgcgctctgc	gccccgtttc	tgcatcggga	480
tcgcccggca	cgggcagggt	gagggggctt	tcggggggtc	ggggcctccg	gtcgcgggcg	540
cgaagacaga	tcggggctcg	gtagggaggt	cattccgagc	ccagagatcc	taggcacccc	600
ccacacacag	gctcccactc	tggtgtgctg	gtgtgtgtgt	gtgtgtgtgt	gtgtgtgtgt	660
gtgtgtgtgt	gtacgttcgt	taacgggagg	aggagagagc	tcccagtcct	tttttgctag	720
caggggcgac	attctcgccc	acatcaagt	gggtaacttt	ggttccctcc	tccggaggct	780
cggtgcattg	gagaaagact	cagttagagg	cgactccaac	gagccgcggt	tttcccacgc	840
ccaacgcccc	gcggccgaag	cgctgctcgg	gtccggattg	cgggatgcgg	ggctggagag	900
gccgagcagg	caccaccgac	ttcccagggc	gcccgggccc	cctggtagag	cccggctgcc	960
cgctggaagg	cgccctcggg	cagcagagag	cctcagcccc	gctgctgctg	tcgctcaaa	1020
gcgcggcgcc	cggcgccacc	cgcctcgggg	tccttttgct	cccagacccc	ggggccgaaa	1080
gggcgggagc	gtgtcccccc	ccagggcgca	ggccccagcc	ccccgcaccc	ctattgtcca	1140
gccagctgga	gctccggcca	gatcccgggc	tgccgcctct	gctgccttcc	ctgagcggga	1200
gcggagcgca	gagaaaagtt	caagccttgc	ccaccggggc	tgagctgct	tgtaaccct	1260
cagagcgcca	cggcgcgagg	gaagggcacg	ccaaccagga	gagggggcga	gggagatgcg	1320
gtccgcctgc	agtcacctct	gcacctcaga	gatttcggga	agtttgagtg	caggaaagca	1380
gcgctccgag	gccaggcctg	gggtgctggc	cgctgcgggg	ggcacgccct	gcgctgctca	1440
ggggcctgtg	gtttcggaga	gcaccccgat	ccagtccccc	atcgccctct	tggcaggcgt	1500
tgggacttgg	agtgaactgg	cagcctgcaa	gtgggtggat	aagagccagg	gcagggcagg	1560
gccgggcaga	gtaaggagg	aaagagacag	ggagtgcctc	aggggtgctag	gaatgagtgt	1620
tgagttcctg	gccggggtag	aggctcaggt	gagagtttgc	gggtgaaagg	caggggaagg	1680
gagttgggtt	cccaggtagg	gactgtctgg	gatggggaga	ctggtgcaga	cttctaagg	1740
agaccactgt	tagagcaatg	ttgggttttag	actttggaaa	tggtgtaaca	tctcagaaat	1800
gcagtgatgg	gtgatagtac	caggggagat	tcaagtgc	ggctgctgag	cccgtccca	1860
agctcctgac	ttctttcttg	gatatacagt	cccgatatag	gactgcccag	ttatagctcc	1920
ttttctacca	ggcttttctg	gttgattatc	ttgggggtccc	tacagccttg	agtcttgcca	1980
tgatcccaa	gcctggctgt	gaaccagttt	tccagatgtc	ctgtacccta	gagaccccaa	2040
ggctgtatgt	gtgtacatat	accccaattt	agcaaggcgg	tttgagagcat	gcctcagaca	2100
gaaaggattc	agacagatcc	ttcctgccat	ctgctagtgg	taccaaccgg	ggcaagtgtg	2160
ttaacctctt	tgagcttcca	agttctccat	tgtaaaataa	tctgctgcct	tcctaggact	2220
gctgagtgg	taggattgca	ttcaacagga	tgtcctatgc	aatgcatgcc	agtctgggag	2280
ctgtcgggtg	ctgagagcac	t				2301

<210> 3

<211> 2501

<212> DNA

<213> Homo Sapiens

<400> 3

cgacacgtag	cctcgggagc	tgcccccgcc	gacccccctc	gccgcgactt	gacccgcggc	60
------------	------------	------------	------------	------------	------------	----

gactgcgctg	ccccttgget	gccccttccg	ctctcgtagg	cgcgcggggc	cactactcac	120
gcgcgcactg	caggcctttg	cgacacgcgc	cccagatgaa	gtcgccacag	aggcgcacc	180
acgtgtgctg	ggcgggcccc	gcgggctgga	agcgggtggc	acggccaggg	accagctgcc	240
gtgtgggggt	gcacgcggtg	ccccgcgcga	tgcgcagcgc	gttggcacgc	tccagccggg	300
tgcggccctt	cccagcgcgc	ccagcgggtg	ccagctcccg	cagctcaatg	agctcaggct	360
cccccgacat	ggcccgggtg	ggcccgtgct	tcgctggctt	tgggcgctag	caagcgcggg	420
ccgggcgggg	ccacaggggc	ggccccgact	tcagcgcctc	ccccaggatc	cagactgggc	480
ggcgggaagg	agctgaggag	agccgcgcaa	tggaaacctg	ggtgcaggga	ctgtggggcc	540
cgaaggcggg	gctgggcgcg	ctctcgcaga	gcccccccg	ccttgccctt	ccttccctcc	600
ttcgtcccc	cctcacaccc	caccccggac	ggccacaacg	acggcgaccg	caaagcacca	660
cgcggagata	cccgtgtttc	tggaggccag	ctttactgtg	ctagagggaag	agggtcccca	720
catccggccc	tggccctcct	ggtccgggtt	gctgaagcaa	cacacttggc	ctacccactg	780
ggtggggcag	gaagtctcga	gccttcactt	gggggtagga	ggaggagat	cggtcagcag	840
ctttaccgcc	cgctctgctc	tccactgcgc	agactggggc	tccggcagag	gctggaccgt	900
gatcttgagg	ttcaggggtg	cattctgggt	ggattccctt	ggcatgggtg	gtcggccctc	960
agcaactgca	gccctcattt	ggctctgtca	ccctgggctg	ccaggacaca	agtctttcca	1020
tgcttttccc	agtgccttgac	ttggcaactcc	ctgcaggcag	gtgggtattg	aggatggcaa	1080
tgcattgtgg	ggatgtggga	gtagggtcta	gaggtccaag	gttctaggat	accctcacct	1140
gcagcaatac	cactcattct	ggcatcgtga	gcagcgttta	gaagcctctg	cactgcagta	1200
agcacagcgg	ggcgcctctg	gagccactgc	ctctagcaca	tccagcctgt	aggctctcagc	1260
ccacctgggg	gaaagtcagg	aaggtctgac	tggccctgga	agggtggggc	acccacacca	1320
catccatgcc	tccctgcctc	cctccaccct	ccctgccatt	tccacaggcc	ttaccttcgc	1380
gcctgcagcc	gcaggctcctg	ctctgagggg	ctgaacacat	gctggagctg	gtgcttggca	1440
attgcctgcc	acttgccctc	gttttctcgc	tccagccgct	cccagatttc	tgggatctag	1500
gagagagaag	tggagagtgg	cagggaaggtg	ctggtaaagt	gggacagtgg	tcctgagcag	1560
ctaactttcc	agtgcctacc	tgttccaaca	ccaggtcctt	ccttaggaggc	tgggtttcag	1620
ttagggctcag	atggggccagg	aaactctgca	agtggggccag	gttgggcagc	tgggtccagca	1680
gtgtgtctgt	gaggaaggcc	cgaagctgca	aggggtgtcca	gtggaggcca	gtgtgatgca	1740
ggtgctggcc	agggggccaa	ggaaaaggaa	ggggctgggt	tgggctgaga	atgcctgtgg	1800
gggcccatgt	cccactagct	ggtgtgtcac	ctgaggccca	aggactgaaa	agagcactgg	1860
ggttgagggtg	ggtgggcaaa	gataaacagc	agggacgcag	tcggggtagg	atggggaggg	1920
cggtactggg	gctgtggggg	ctggtgcgga	gggagtctga	ccttgagtag	ccgtcccttg	1980
gcaaaacttg	tgaggcagta	gcgcgcctga	gcctcagggc	ttagcagcag	gttgtacagg	2040
gcgatccaca	cttgcccgtc	caacttgctc	agcttttgc	gctctgaggg	ggccacagta	2100
tgccaacggc	tgccctcgaa	ctgctgcagc	ttgcctgggg	agaggaacca	gcacactggg	2160
tgcagacgtt	gaattctctt	caagtgcagc	agctgtgggg	gctgggagac	tgaccactgc	2220
ctgggaatgg	gagaacctgg	gctgcaggag	ttgcccaggc	tatagggtctg	ctgaccccag	2280
agcagggtga	gcctcagtag	tggacacatg	ggcctggcct	gctgcagagc	tcagggtctag	2340
gccaaccttg	gctgaggcat	cctgggtatc	tcagtgggct	tggggacagg	gtttgtcttc	2400
gtgtgtgcaa	gctgcccccc	tctatcaaaa	agataccctg	aagcagtagc	ctggggctta	2460
ggctggtggg	ggaggaccct	acctccttcc	cgcgggctcc	a		2501

<210> 4

<211> 2501

<212> DNA

<213> Homo Sapiens

<400> 4

agcataaaac	tgccccaaagt	ctttgattct	gtattcattc	caaagattag	tgtttgcctg	60
aagttttgtt	agctccaccc	tcactgaaat	agggtcatat	tcagggttaa	agttaaatgg	120
atttgaaaaa	agttctaagt	cctttttta	gaacctgagg	tccttaaaat	gtcttcaaa	180
ttcttttttg	agacgacaga	tcaccatttg	atacctatca	ggatcaaata	ttttttcatc	240
ttccttattt	tgtgttttta	gctcatcaac	aacttctctg	agggcaggaa	agtctgttag	300
atttttttcc	tcaatatgtc	tttgaaataa	attcagctta	acttcgaaag	tacaaatatg	360
gtcaaaggca	gcagcagcaa	agactttact	aactcgtaat	tcttctactga	gttctcgaag	420
gtgttccata	atgtccacca	agaagccaaa	gtcaciaaagc	cattgtttgt	ctgagaagtg	480
gactgttggt	gcccctactg	aaaccaagaa	cgcttccatt	tctttttctta	gagagaatat	540
tagtttttaa	gttttccctc	tcctaagcca	attgttcaga	catcgcccat	taaccctttc	600
accatgctct	gattcagatt	ccgttagtaa	agtctgaaat	tcaggctcgcc	taacgcctct	660
ggtcttaatc	aaaactatcc	attcggatat	ggtatttatg	atctgattaa	catctacatc	720
ataggagctc	aacagttcca	agtgaagaaa	tcctgaataa	tgaatgacat	tccaacagtt	780
ggggcttacg	gccttttctc	tcattgtatga	gacgagtcct	gagttctcac	caatcatcct	840

caaagtatgg	gtcgtggtca	gtccaacat	tctctgcaag	ctaagccctg	ctgtctgcag	900
ggactctagg	attgccgaca	tgagcgcacc	aacactgaaa	tgatgagtca	ggttgattat	960
ggtcagaaga	tcttcttgca	cctccaactc	agggcctaca	ccgcgataa	agaccaggag	1020
gtagttctca	taggccacaa	aagcctggtc	gtccaaggca	agagaatagg	ctttaaagtc	1080
cctggctcgg	ttaaaaagct	ggttgcgtag	attcctgtca	atgctcagga	tcctctgcct	1140
tgtgatatct	ggagataagt	caacgccttg	caggacgctt	acatgctcgg	gcagtaacct	1200
tctcagcaac	acctccatgc	actggtatata	aaagtcctcc	tcaccccgag	cgcgaccctt	1260
caaggccaag	aggcggcaga	gcccgaggcc	tgacagcgca	gctctctctt	caggagtga	1320
ggaggccacg	ggcaagtcgc	cctgacgcag	acgctccacc	agggccgcgc	gctcgccgtc	1380
cgccacatac	cgctcgtagt	attcgtgctc	agcctcgtag	tgccgcctga	cgctcgcttc	1440
gcgggtagct	acgatgaggc	ggcgacagac	caggcacagg	gccccatcgc	cctccggagg	1500
ctccaccacc	aaataacgct	gggtccactc	gggcccggaaa	actagagcct	cgctcgacttc	1560
catcttgctt	cttttgggcg	tcatccacat	tctgcgggag	gccacaagag	cagggccaac	1620
gtagaaaagg	ccgcaagggg	agaggaggag	cctgagaagc	gccaagcacc	tcctccgctc	1680
tgccgccagat	cacctcagca	gaggcacaca	agcccgggtt	cgccatctct	gctcctattg	1740
gctggatatt	togtattccc	cgagctccta	aaaacgaacc	aataggaaga	gcggacagcg	1800
atctctaacc	cgcaagcgca	tatccttcta	ggtagcgggc	agtagccgct	tcagggaggg	1860
acgaagagac	ccagcaaccc	acagagttga	gaaatttgac	tgccattcaa	gctgtccaat	1920
caatagctgc	cgctgaaggg	tggggctgga	tggcgtaagc	tacagctgaa	ggaagaacgt	1980
gagcacgagg	cactgagggtg	attggctgaa	ggcacttccg	ttgagcatct	agacgtttcc	2040
ttggctcttc	tggcgccaaa	atgtcgctcg	tggcaggggt	tattcggcgg	ctggacgaga	2100
cagtggtgaa	ccgcctcgcg	gcgggggaag	ttatccagcg	gccagctaata	gctatcaaag	2160
agatgattga	gaactggtac	ggagggagtc	gagccgggct	cacttaaggg	ctacgactta	2220
acggggccgcg	tcactcaatg	gcgcggacac	gcctctttgc	ccgggcagag	gcagtacag	2280
cgcatgcccc	caacggcgga	ggccgcgggg	ttccctgacg	tgccagtcag	gccttctcct	2340
tttccgcaga	ccgtgtgttt	ctttaccgct	ctccccgag	accttttaag	ggttggttgg	2400
agtgtgaagt	gaggaatata	cgtagtggtg	tcttaatggg	accgttaact	aagtaaggaa	2460
gccacttaata	ttaaaattat	gtatgcagaa	catgcgaagt	t		2501

<210> 5

<211> 3838

<212> DNA

<213> Homo Sapiens

<400> 5

gtagtaggta	cctgttcaag	cttgatggaa	ggacttcccc	agcctcccca	cacatattat	60
gtaaagtgat	cgctgtcttt	gcttctctct	ggagaccatt	tatttttatt	ttttgagacg	120
gagtctcggt	ctgtcgccca	ggctggagtg	cagtgtcgca	atctcgactg	actgcaacct	180
ctgcctctcg	agtagctggg	actacaggcg	cgcgccacca	cgcccggcta	atttttgtat	240
ttttagtaga	gacgggggtt	caccatgttg	gccaggctgg	cctcgaactt	ctgacagcaa	300
gtgactcacc	taccgcggcc	tttcaaagt	ctgaaactac	aggcatgagc	ctccacaccc	360
gtccaggagc	ccatttatat	gggagcctgc	ttctaaagat	tattacctgg	tgccagggtg	420
ttttccagac	ctgtcctcac	attcctgtta	aacaggagga	agtgaatcgc	gctccttttc	480
atctaccttc	tccgagggtt	tatgcctcca	atattaacct	cagcacagcc	aaagaaaatc	540
attccattcc	attgagcgga	gtcagaaaca	tgactaggtc	acgatcaca	ccccgtgtgt	600
gccagggtga	ccgagactgg	gtgactttat	ggtgtttcaa	cgtgtgggtt	ttgactgatt	660
atattatggg	ttttccagtc	aaaaactcaa	agcagtggtg	aaagcacttg	cgacctaaaa	720
taagcaatgg	aatgaacagg	aaggcgaaac	cagagtttaa	agcggcagga	caaacaggaa	780
aaaggaagag	tgaggcagga	agggtttaaa	tgcaggctcc	tcggaggaca	agtcgccgcc	840
acacccctgt	ctgcgctccc	gccagccgcc	ctcacgcggc	gcgggaaaa	ggtcggcctc	900
gccctgggct	caggttctct	ccgcccgcga	ggcagtgggg	tttttttttg	ttttttttga	960
gacggagtct	cgctcagtcg	cccaggctgg	agtgtagtg	cgtgatctcg	gctcactgca	1020
acctccacct	ccggggttca	agcgattctc	ctgcctcagc	ctcccgagta	gctgagacta	1080
caggcacgcg	ccaccacgcc	cagctaattt	ttgtatcttt	agtagagacg	ggctttcacc	1140
atgttggtcca	ggatgggtct	gatgtcttaa	cgtcgtgatc	cgccgccttc	ggcctcccaa	1200
gtgctgggat	tacaggcggt	agccactgcg	cccggcccca	gccaggcagt	tttaatcgag	1260
cgctcacaac	cactgagacg	cagtgaagca	cccaccataa	aatcccagga	ggccgaccgc	1320
cggttcagac	tttttctttt	ctttaatccc	cgtccaaggg	atccgccctc	acccccacc	1380
ccagccaccc	caattcccta	ttccctcccc	ttggacggcg	ccggggaaaa	caagctgctc	1440
gagctttatt	tcttcgggtg	aaccaactca	gaatgaattc	ctccgcccct	gcgtgctcag	1500
tgagtcggca	ccctagcagt	gaactgcatt	taaaacctca	ggaattgagc	gaactctccc	1560
agtggctctc	ctcaccggga	tccccctcca	cgctcctccc	ccgtgccgcg	cctcagtcgg	1620

caactgctcat	tggccgcgtg	ccttgccaat	ccgatgcacg	tcggctaggg	caaagaccgc	1680
gaaaaagcgc	gtacacctgg	ctctgggagc	gcgcgcctaa	cgccagccag	cagcaggagg	1740
cgcgcgaggc	accacggcct	ggcgggccgag	agtcaggagg	gaacctcatt	tacataacgg	1800
ccgccccctc	gtctcctggc	ggggggccgga	gtcccccccc	tcgtccaact	tgaaatctgt	1860
tgggtcacgg	gccagtcact	ccgacctagg	caagcctgtg	gtggagctgg	aagagtttgt	1920
gagggcggtc	ccgggagcgg	attgggtctg	ggagttccca	gaggcggcta	taagaaccgg	1980
gaactgggcg	cggggagctg	agttgctggt	agtgcgccgt	gtgcttggtt	cgaggtggcc	2040
gttagttgac	tccgcggagt	tcatctccct	ggttttcccg	tcctaacgtc	gctcgccttt	2100
cagtcaggat	gtctgcccgt	ggccccggcta	tcggcatcga	cctgggcacc	acctattcgt	2160
gcgtcggggt	cttccaacat	ggcaagggtg	agatcatcgc	caacgaccag	ggcaatcgca	2220
ccacccccag	ctacgtggcc	ttcacggaca	ccgagcgcc	catcggcgac	gccgccaaga	2280
accagggtgg	ctgaacccc	accaacacca	tcttcgacgc	caagaggctg	attggacgga	2340
aattcgagga	tgccacagt	cagtcggata	tgaaacactg	gocgttcccg	gtggtgagcg	2400
agggagggcaa	gccccaaagt	caagtagagt	acaaggggga	gaccaagacc	ttcttcccag	2460
aggagatata	ctccatggtc	ctcacgaaga	tgaaggagat	cgcggaagcc	tacctggggg	2520
gcaaggtgca	cagcgcggtc	ataacgggtc	cggcctatct	caacgactcg	cagcgccagg	2580
ccaccaagga	cgcaggcacc	atcacggggc	tcaatgtgct	gcgcacatc	aacgagccca	2640
cgcgcgcggc	catcgccctac	ggcctggaca	agaagggctg	cgcgggcggc	gagaagaacg	2700
tgctcatctt	tgacctgggc	ggtggcactt	tcgacgtgtc	catcctgacc	atcgaggatg	2760
gcatcttcga	ggtgaagtcc	acggccggcg	acacccacct	ggcggtgag	gacttcgaca	2820
accgcatggt	gagccacctg	gcggaggagt	tcaagcgcaa	gcacaagaag	gacattgggc	2880
ccaacaagcg	cgccgtgagg	cggtgcgca	ccgcttgcca	gcgcgccaa	cgcaccctga	2940
gctcgtccac	gcaggcgagc	atcgagatcg	actcgtctta	cgaggggcgt	gactttctata	3000
cgtccatcac	gcgcgccccg	ttcgaggagc	tcaatgccga	cctctttcgc	gggaccctgg	3060
agccggtgga	gaaggcgctg	cgcgacgcca	agctgggaaa	gggccagatc	caggagatcg	3120
tgctgggtgg	cggtccact	cgtatcccca	agatccagaa	gctgctgcag	gattttcttca	3180
acggcaagga	gctgaacaag	agcatcaacc	ccgacgaggc	ggtggcctat	ggcgccgcgg	3240
tgaggcggc	catcctcatc	ggcgacaaat	cagagaatgt	gcaggacctg	ctgctactcg	3300
acgtgacccc	gttgctcgtg	ggcatcgaga	cagctggcgg	tgctatgacc	ccactcatca	3360
agaggaacac	cagcatcccc	accaagcaga	cgcgacacct	caccacctac	tcggacaacc	3420
agagcagcgt	actgggtgcag	gtatacgagg	gcgaacgggc	catgaccaag	gacaataacc	3480
tgctgggcaa	gttcgacctg	accgggatcc	cccctgcgcc	tcgcggggtc	ccccaaatcg	3540
aggttacctt	cgacattgac	gccaatggca	tccttaacgt	taccgcccgc	gacaagagca	3600
ccggtaaagga	aaacaaaatc	accatcacca	atgacaaaag	tcgtctgagc	aaggacgaca	3660
ttgaccggat	ggtgcaggag	gcggagcggt	acaaaatcgga	agatgaggcg	aatcgcgacc	3720
gagtcgcggc	caaaaacgcc	ctggagtcc	atacctacaa	catcaagcag	acggtggaag	3780
acgagaaaact	gagggggcaag	attagcgagc	aggacaaaaa	caagatcctc	gacaagtg	3838

<210> 6

<211> 2893

<212> DNA

<213> Homo Sapiens

<400> 6

tcctggctcc	agatacagtt	aagctgctac	aacaaccagg	gggaccacga	gggagcacca	60
ggaggggggag	gacccccctca	agaggtgaga	aggggtctgc	ggcctcgtct	ccagccgagg	120
gcgggagggcg	cctcgccctc	acacccatcc	gctccctcca	accagggccg	gggagggtag	180
ccacatgggt	ccaggcaagt	aataacaaaa	taacacggca	tcccagttaa	tgctgcgtgc	240
acggcgggcg	ctgccggtca	aatctggaag	gggaaggagc	tcaggtagtc	gcggaggacg	300
gggttgaggg	ggatgcgagc	caggttctcg	cggcccacgg	tggccacgat	gcgctggcgg	360
cacagctcct	gcagcgggcg	cacgcggcgc	tggcgcagcg	gggccccacg	catgcggcgc	420
ggcgccgcca	cgtagtgtc	cagcagctcg	aagaggcagt	cgaagctctc	gcggctgcca	480
tccaggtgaa	agcggccggc	ctgaaagtgc	acgcggatgc	tcgtgggtcc	cgaggccatc	540
ttcacgctaa	ggcgaaaaaa	gcagttccgc	tggcggtgt	cgcgaccag	gaaggtgcc	600
acgggctcgg	cgcgagccg	ctcgtgcgcc	ccgtgcacgc	tcaggggccc	ccagtagaat	660
ccgcaggcgt	ccaggagcgc	gctggcgcg	gtgatgcgc	ggtaatcggc	gtgcgaacgg	720
aatgtgcgga	agtgcgtgtc	gccggggggc	ggggccggga	ccgcggggca	cggccgcggg	780
cgcgcggggg	ccgcggggcg	ggaggaggaa	gaggaggaa	gttctggccg	ccgtcggggc	840
tctgctgctg	tggagactgc	attgtcggct	gccacctggt	tgtgtgctac	catcctacag	900
aaggggcccag	ccggaggggt	gggccatagc	gtccgggggt	gcgctgcggg	agagacaaag	960
aggtgagctg	gggcgctgcg	gggcccggga	ggtgtgcgcc	ggccggacaa	ctccggaggg	1020
cggcgctccc	ggcggaccgg	gccctagggg	gcgagcacgg	agcaccaagt	ccgcgcggat	1080

ccgttcagcc	tcagtggaca	cagctagaaa	atgggctctg	tactccgcgg	agctcttccc	1140
ggcgggtggg	ggctcgggtg	aggcggagtc	cggcctccgg	gcagcaccga	gagggggggcg	1200
tggagagcag	ccggttctgg	ctccagccgt	ccggccccgg	ctcgccgccc	cgcgcccgcc	1260
gcctgctggc	caggctggga	tccgcgcctg	gtctgggcga	tttgggctag	ggccggagaa	1320
aggctgtgct	gcgggagccc	cgcgcgcggg	gggcgccctg	ggtggggccg	gcgagggtca	1380
ggggcatcgc	ggccgcgacc	ccattctgca	gcccccgagg	ctcgcccgac	tcctggctgc	1440
cctggactcc	cctccctcct	ccctcccgcc	tcctcgccca	ggggccgget	cacctggcgg	1500
cggggcgcg	gacgcgcggg	gcgggacggc	ggggggctcc	ggggcgctcc	ggggcggtcc	1560
tcgcgcagtc	tccggggcca	ggagccgtgc	agctgccacg	gcgcgagctc	gctctgttcg	1620
gcgcccgcgc	ctgcgccagt	cttttaaacc	ggctcggagg	cggggctggc	gacggcgggg	1680
ggccccgcgc	cctgcgggcc	ccgccccag	ctccactttt	ggtttctctt	tcgcgggtgg	1740
cgtccggcga	ggaccgcttc	ggccctgttt	ccctctcttc	tggacctcc	cgcggggccc	1800
tctgcccgcc	tgttcgcaac	tgccccagca	cccgcctctc	gaggggctct	ggccccgacc	1860
ctgcgccttc	cggccacttc	tcggaccct	ccttcggact	tggcgacccc	gattttgccc	1920
cgctacctcg	ggttccactt	tctgccgcca	ggccctcttg	ggacgcgccc	tgacacaccc	1980
tcctccgccc	cagctgtctc	cacacccgcc	gggggcagag	ccctgtcctc	tcctccccctg	2040
gagccagatc	cccctaggag	gccacagaag	gtgtcccaaa	ccctgagcct	gacccacccc	2100
ctagaccccc	tcctagcccc	tgctccaccc	gccgtcgacg	ccctcagtcg	cccgcctctg	2160
tgtcccgaag	ccccggccgg	ccgcggtctc	tggctcttgg	tcgggcttcc	cgggaagcgg	2220
cggcctgacc	acaggccttc	gaggaacccc	tggcggcgcg	ggcgccctca	ccccggccca	2280
gttctctgga	aactgggcgg	ggccgggcaa	ggtccctggt	ggcctcgact	gccctccctg	2340
cgtccccact	acccggctgc	ggaagaaact	gaggctgggg	aggggctggg	atttgcaatg	2400
gcttgagat	tgggagctct	ggacctggat	ctcgccctcc	ccgtcttcat	tttggggaga	2460
ggtgcagctg	gacgacatca	aattggagcc	cagtgaaaaa	atggtgcatt	ctcagacgtg	2520
atgaatcccc	aaacctgggt	tcctagccct	cctctccccc	gaccccttcc	tcatagattt	2580
ccccctccta	ctgctccgtc	aggcatctgc	ccttcaaaga	ctgccttccc	accacacaca	2640
cggccggggc	ttgggatggg	gggcggtcgg	tggctggggc	tgtaatttgc	acacgtgttt	2700
gtgatttagt	gattccgatt	gtcgtgcgag	gccatggagt	aggtgcctgg	ctgctccgtg	2760
tatttttgaa	tgaaggcatg	tgaggagccc	cagcatcaca	aggggccaca	taaaaacctg	2820
gctaggctgg	gcacttggtt	actggcctca	cactgggaca	cactgccctc	tacagacagc	2880
tctcagacgg	ctt					2893

<210> 7

<211> 5898

<212> DNA

<213> Homo Sapiens

<400> 7

acaacagccc	tgtaaggtag	ggaccatgat	catctccaga	agaggctaaa	taaattgcc	60
aagatcacat	atgtagcaag	tgggtggcaga	gtgaggattc	atacctggac	agcttaactt	120
taaagccatg	gtgctaattg	attcattcat	tcattccatc	attcattcat	ccatccattc	180
attcaatgat	tatatgggat	gcctactaca	tgctaagaac	tatgttcaag	gtgctgaact	240
acagctgtga	acaatgcaag	tacaaatata	tgaagcagag	ttggggagaa	agtaagctgg	300
agaaataaga	cataaactag	gttagatggg	gaacatgatt	aaggaaaaaa	ctagagcagg	360
gaggaaagag	aaatgtgcag	ggggaaggtc	aattctgagt	gagccaacag	gcaaggctct	420
actaagaaa	cggcattaaa	taaagatttg	aggaagttag	ggagtaaacc	ttgcagctat	480
ctaaaaggag	agcatgagag	gtagaggaga	cagcaaatac	aaagaccctg	aagcaggggc	540
aaggctaata	agttctagaa	ttagcaagga	gtccagtgtg	acttgaacag	agtgatcaaa	600
gaacagagca	ggaggaaatg	aggtcagaga	ggtaaacagg	ctggagtgcg	gtggcaccgt	660
ctcggctcac	tgcaacctcc	acctcccggg	ttcaagcgat	tctcctgcct	cagtctccct	720
agtagctggg	attacaggca	tgcaaccacca	cacccggtca	atttttgtat	ttttagtaaa	780
gacggtgttt	caccatgttg	gccaggctgg	tcttgaaact	ctgacctcaa	gtgatccacc	840
cgcctcaacc	tcccaaagtg	ctgggattac	aggcgtgagc	caccgcgccc	ggccaggatt	900
cttttaatat	agtatgatgc	agccatcagg	gttgaggcat	tctaggaaga	gggaacagca	960
tgcaccaagg	caacaggaaa	gcacataaaa	aaggagttgc	tggaagattc	atttcaaccc	1020
actatcaagt	aaatatataa	cttactgtat	aaaaatgtta	gggccaggag	gggtggctca	1080
cgcctgtaaa	cccggcactt	tgagaggccg	aggcaggagg	atcggttgaa	cccaggagtt	1140
cgagaccagc	ctgaccaaca	gggcgaaacc	ccgtctctac	taaaaatata	aaaactagcc	1200
gggcgggtg	gtgggcgcct	gtaatcccaa	cttctcggga	ggctgaggca	ggagaattgc	1260
ttgaacctgg	gaggcgagg	ttgcagttag	ctgagatcac	gccctgcact	ccagcctggg	1320
cgacagaggg	agacttggtc	atgctccctc	ccgcctctcc	gtcagtttta	ggaataaata	1380
cctttttatt	taagctaaag	tgtgggtaca	cccttctctc	aggattctcc	atcaaggaat	1440



aagaagccat	attaggacaa	tttagagggc	agttaaccct	agtagacata	gtgggttctta	1500
aaaggcttgg	ggcctcagac	tgtacacagg	cttcacatgg	aatctgattt	gttcctttat	1560
cccagtcctt	caccacagaac	ccgaatctag	cccttcatgt	tataaaaagg	gccagaggtc	1620
caaagagggg	aagtgccttg	tgcaaaatta	ttcaactact	ttgtagagga	ttttaactag	1680
ggttcagtta	gctccgcccc	cactataaaa	ggctctttct	aaaaaacgaa	acatgattaa	1740
gggcacacgg	ctccagcggt	aacaaagctc	tttgtagct	gggaaatgcc	cccctccccg	1800
actcatctgc	ttatcatctg	catagaatta	tgtactcaaa	agcaggaaaa	ttattgagaa	1860
aaccattggg	ccccggctgc	agaccccaag	gttgggagct	ggttcccgtt	tcctcccaga	1920
gccggcaggg	ggggcaccag	gcaaagtttg	caagacgcgc	ctccctccca	cccctcccc	1980
ttcctcgccc	aacttcccat	agccgcggcc	tcaactaaaa	gtggccattg	acctttcaag	2040
ctttcgagca	gtgatgcaat	agaatagtat	ttcaaagaaa	aatgcttata	gaaattttgg	2100
atccgggttt	cccggtgattg	ttaagggttt	cttttaaaaa	gtaggtcaca	tttcaagtag	2160
gtcatatttc	gggggcgggt	gcgcagacaa	ggagatgagt	ttccactaag	gccagggggc	2220
ctccaacggg	gttgagggtg	agaatcccag	gtagggtaga	ggtgccgaga	tccttccgaa	2280
tcccagccct	ggggcgctcag	ccctgcaggg	aatggcagag	acactctccg	gactgagggg	2340
accgaggcca	gtcaccaagc	cccttccggg	cgcgaggtta	agggcgcccc	cttagcagcc	2400
ggcgaggtg	acccggggcg	gccgccgggt	ctaccggaga	cgttggagca	gaggggagga	2460
ggaagggagg	agccgggtgg	gtgcgggtga	caaggagccg	gagcgccagg	gggaggggac	2520
taaggacggc	cggcgccgct	taaggaggcg	ctgctctccc	gctcgctgcc	ttccaggacc	2580
tgatcaaggg	gaccgcctcc	ggtccccggc	cgtgggcacc	gggacgagca	cgcgctcccc	2640
acgccatcga	tgtgtcttag	agccggagag	tctggtttcc	gaggaccac	agtcgctcct	2700
gcacgcccac	cccccgcaaa	agtgcggcca	ggagggctgc	atcgaggggg	cgccgcccgg	2760
atgttttagag	gaacccaccc	ccgtggcagg	ccaagggcca	aggatcgcta	tccttccctg	2820
aacccggggc	ctcagctggc	ccgggtaggg	ggcaggctcc	ggccgcccga	acggggttgg	2880
ctgtagccgg	tggccgggga	gatctctagc	ttgcgcccga	gcaccccggg	gtgtggggcc	2940
agaggcaggc	cgaccccggc	gtgcacaccg	cccgccttgc	acccgagcgc	tctcaccggg	3000
tcttccctga	agcctgtgta	ttgcgaccga	gcctctttta	agcagtagcg	gggcccggcg	3060
tcacgtgagg	ccgattcctg	gaaagtctct	ggaaagccgc	ctccgcagca	gccggcgggg	3120
gcgcgagcgg	agcgctgact	ggggagggag	gcggggagca	agggagggcg	gtcgggtctg	3180
gaagtcgcgc	gcactcgctg	ctcctggggac	cgacgtttta	ctcttgccaa	gtctcgctgc	3240
agccgcggcg	gctggcgggc	cttgggcttc	ccctgaagca	tgagccctct	cgcccgcgag	3300
caccctcacc	gcgtggcccc	cggacagtgc	gcgcgggggt	cccgggtgca	cagcctcagg	3360
ataccccgtg	cccgcagctc	gggcgccccg	ggcagggtacc	ggtagtgggg	gaagcccga	3420
ggctccgccc	cgaggagagt	taccggggag	ggcgccgag	cgcgcccgcg	tgccgcccgg	3480
agcgccggac	ggcctgggct	tccgcagctc	ggagcgccgg	ggaagagaga	gtccgaaccg	3540
cggctctgcc	ccgcggccta	gcgttgctgc	ctgctttctc	cagccccttc	tcggcgctct	3600
gaagtgtctg	gagtttcttt	tttttatttc	ccctaaactg	ccattcaaat	taataatcct	3660
cctaataacc	tgatctcccg	ctcctcccca	ccggcctgcc	tcccgccctc	gctccttctc	3720
ccctccctcc	ctctctcctt	cccacctcca	gggtcgcagc	cggagggaaa	cccggcagca	3780
gtccgagagt	ggaggtgtcc	cagcccgtag	ggggcgctgc	cgcgcggtgg	gggatggggg	3840
cgaggcaatg	atcctcgagg	cttttgtgtg	ccctctgcgc	acggaactcc	gaccgcccgc	3900
tccgagcgcg	gggctgggtg	catccccggg	catctcgttc	ccaaattaaa	cgttaacggg	3960
ggaaacaagg	gcagacgccc	ctcctctccc	gggcccctcc	cacctcccct	tttcccccca	4020
cccccccgcc	ccatgtccgc	tgaggaggct	gcctgtgtgc	gagggcgccg	cgccgcccgc	4080
ggccgaggtc	gaggtaaag	cgcggcgttg	gtggtttgca	ttttccgag	cgctcgcgac	4140
cgcccgctcg	gccccggcct	cgccctggag	ccccgcgagg	gctgcgcgct	cgggcccatt	4200
ctcgcagacg	gccccggcg	gcgagaacca	ccgcagccat	cctggtccgg	gagcgaccgc	4260
cgcggcaccc	ccaaccccg	cagagcgggc	accaggaagc	ggggggaggg	gagcgaggag	4320
cctcccgggc	ggagatgcgg	cagctcccgc	acctccgcac	cccgggttgg	tgccctcggg	4380
ccccgcagcg	cttttagggc	gagaaccaag	tttgtgtggg	tgettcttcc	tggggggcct	4440
cgggctgcgc	caggtgtgag	accggaatgc	caatttgggg	aatctctcct	gttcttttct	4500
ttttaatttt	ttctacttgt	ccttgacaag	ggcctattcc	caactgtag	cggaagaca	4560
atttgcctct	cctaggtcgc	cagtctttga	tttcagtag	tgacctggg	tatcttggat	4620
ccctgttcac	cctcctcctg	acctccgccc	cccacctctt	cagccaaact	agcttggggg	4680
ctctgctctc	tttatctttt	ctctagagct	gggccagggc	gctaactgga	ctatttcccc	4740
taaatgggtg	aggaacgtag	aggcgaggga	gtccctggga	ttttccacgt	tttctctttg	4800
acccccaccc	cagccgcagg	ggtccagttt	ggactgaccc	aacctcccgc	ccaggatctg	4860
taggcgatca	gtgggtgacc	gcggctgcga	gggactttgt	catccgtcct	gcagggactc	4920
gggagaaaga	gccccatccc	ttctctctct	gccaccattt	cggacacccc	cccagctcgg	4980
gttttgggat	tcgcaactgac	ttcaaggaag	gacgcgaacc	cttctctgac	ccttgagccc	5040
gcggccacct	gtcttttgcc	cggtgaccct	tctctcatga	ccctgcgggt	ggcgaggagg	5100
tccgggaatg	gcgggggaag	gacgcggagc	cagtggggga	ccgcgggggt	gacaggtagg	5160
ccatccccgc	aggcgggcgc	tctggcggaag	gccctgcggg	agctcggtca		5220

gagccgatcg	gccgcgacgc	gtgcgggagc	gagcgccctcc	ccaaggaagc	agctaggaag	5280
cggggtcgag	gtgggaagca	aagaataaga	tggaaatacg	tcccttgctt	ccaagggacc	5340
gcggagagca	cgctcgagc	gtcctgggtc	cttgggaatg	cgtaaggaaa	gtggttctcc	5400
agggactcag	gcctggcgga	gcgcagagcg	cggaagagc	ttcttgaaa	tagcttctta	5460
gcacgctgga	agatttactg	ttttccgcag	ctgctcaggg	ttaggctccc	gggctcgaac	5520
cccggccggg	gaaagcgctc	ggcgccctccc	tttgacggg	gtgcaatcag	caagtcggtg	5580
ccgcgggccc	cgaggcccca	gcagcatctg	gctcccgggc	ggagctgcgg	ctgcagccca	5640
ggatcttggc	ggccaagttc	agggaactgac	actgccgcga	gggcggtgc	ccgggcgtcg	5700
agagttaggt	gcgaagcccc	cgccgagcgc	ggcttccatg	gtcggcgcg	ccagggtact	5760
gccgctttca	agtacagtca	ggcaattcgc	gcggcacgct	gtctctaggc	atctgaaaaa	5820
agaaaaaaga	aaaaaagtaa	agtatctggc	aaatcattct	ggctttccaa	atccgatatcc	5880
taaaagctta	cagttgtg					5898

<210> 8

<211> 2501

<212> DNA

<213> Homo Sapiens

<400> 8

ttgtttgtaca	gaatattttca	tcacccaggt	attatgccga	gtacccaata	gttctctttt	60
ctgctcctct	ccttcctccc	atcctgcacc	ctggagtcaa	ccacagtgtc	tggtgtttcc	120
ttgtttgtgt	tataagttct	catcatttag	ctcccactta	caagtgagaa	catccagtat	180
ttggattttct	gttcctgcat	tagtttgcta	aggataatag	cctctagctc	catccatggt	240
cccacaaaag	acatgatcta	gttcttttta	atggctgcat	taaatgaagt	tttaaagata	300
caacataaac	accaaactct	tccccaccac	aaaaatccct	tgctgaattt	gattacactt	360
aaattaacga	gttttgtttc	atgaaagact	ccttgacaa	acttgacagt	tgaatggaga	420
ggagaagctg	tctgtcatgt	ctaaagccaa	caagagatca	atatctagaa	taaatggaga	480
tctgcaaatc	aacagaaagt	aggcagcaaa	gccaaagaaa	atagcctaag	gcacagccac	540
taaaagggaac	gtgatcatgt	cctttgcagg	gacatgggtg	gagctggaag	ccgttagcct	600
cagcaaaactc	acacaggaac	agaaaaccag	cgagaccgca	tggtctcact	tataagtggg	660
agctgaacaa	tgagaacaca	tggtcacatg	gcggcgatca	acacacactg	gtgcctgttg	720
agcgggggtgc	tggggagggg	gagtaccagg	aagaatagct	aagggatact	gggcttaata	780
cctgggtgat	gggatgatct	gtacagcaaa	ccatcatggc	gcacacacct	atgtaacaaa	840
cctgcacatc	ctctacatgt	accccagaac	ttcaaataaa	agttggacgg	ccaggcgtgg	900
tggtctcacgc	ctgtaatccc	agcacttttg	gaagccgagg	cgtgcagatc	acctaagggtc	960
aggagttcga	gaccagccc	gccaacatgg	tgaaacccc	tctctactaa	aaatacaaaa	1020
atcagccaga	tgtggcacgc	acctataatt	ccacctactc	gggaggctga	agcagaattg	1080
cttgaaccog	agaggcggag	gttgacgtga	gccgccgaga	tcgcgccact	gcactccagc	1140
ctggggccaca	gcgtgagact	acgtcataaa	ataaaataaa	ataacacaaa	ataaaataaa	1200
ataaaataaa	ataaaataaa	ataaaataaa	ataaaataaa	ataaaaaaat	aaaataaaat	1260
aaaataaaat	aaagcaattt	cctttcctct	aagcggcctc	cacccctctc	ccctgccctg	1320
tgaagcgggt	gtgcaagctc	cgggatcgca	gcggtcttag	ggaatttccc	cccgcgatgt	1380
cccgccgcgc	cagttcgctg	gcacacactt	ctgcgggtcc	tcttctctgt	gtctgtttac	1440
tccctaggcc	ccgctgggga	cctgggaaag	agggaaaggc	ttccccggcc	agctgcgcgg	1500
cgactccggg	gactccaggg	cgccctctg	cgcccgacgc	ccggggtgca	gcggccgcgc	1560
gggctggggc	cggcgggagt	ccgcgggacc	ctccagaaga	gcggccggcg	ccgtgactca	1620
gcactggggc	ggagcggggc	gggaccaccc	ttataaggct	cggaggccgc	gaggccttcg	1680
ctggagtttc	gccgccgcag	tcttcgccac	cagtgaagtac	gcgcggcccc	cgtccccggg	1740
gatggggctc	agagctccca	gcattggggc	aacccgcagc	atcaggcccc	ggctccccgc	1800
agggtcctct	gcccacctcg	agaccgggga	cgggggccta	ggggaccag	gacgtcccca	1860
gtgcggttag	cggctttcag	ggggcccgga	gcgcctcggg	gagggatggg	accccggggg	1920
cggggagggg	gggcagactg	cgctcacgcg	cgtctggcat	cctccccggg	gctccagcaa	1980
acttttcttt	gttcgctgca	gtgccgcctt	acaccgtggt	ctatttccca	gttcgaggta	2040
ggagcatgtg	tctggcaggg	aagggaggca	ggggctgggg	ctgcagccca	cagccctctg	2100
cccaccggga	gagatccgaa	cccccttata	cctccgtcgt	gtggctttta	cccggggcct	2160
ccttcctgtt	ccccgcctct	cccgccatgc	ctgctccccg	ccccagtgtt	gtgtgaaatc	2220
ttcggaggaa	cctgtttccc	tgttccctcc	ctgcactcct	gacccctccc	cgggttgctg	2280
cgaggcggag	tcggcccggg	ccccacatct	cgtacttctc	cctccccgca	ggcgcgtgcg	2340
cggccctgcg	catgctgctg	gcagatcagg	gccagagctg	gaaggaggag	gtggtgaccg	2400
tggagacgtg	gcaggagggc	tactcaaaag	cctcctgcgt	aagtgaccat	gcccgggcaa	2460
ggggaggggg	tgctgggcct	tagggggctg	tgactaggat	c		2501



<210> 9  
<211> 2501  
<212> DNA  
<213> Homo Sapiens

<400> 9

cttggactct	aatgtgtatt	ttacacttac	agcacaatta	atttgggact	agctacattt	60
cagctcaaca	atagccaata	gcatatggga	tagcgcaaat	aaactctgcg	tctctgttgc	120
ttctttgggt	ctcggagacc	tcaacccttt	cttcagattg	caaacccttct	tgccttcaag	180
cctcggtctc	aacaccagtc	cggcagagga	accagtccta	atgagggtacg	ctcccttcct	240
gccattctct	attccattaa	cctgtttcgt	ggtaaactga	ggactgatcc	tccaaaatta	300
ccttattaat	tagctttacat	atttattatc	tatctgtccc	accagaatgc	aggtttcctg	360
aaggcaggga	tttaaaaaaa	tctgttttgt	tctatgtgat	tttcccatac	caagcaccgt	420
gcccggcaca	agctgggata	ccagtacaca	tctcgggacg	gaagaaccgt	gtttccctag	480
aaccagtcga	gagggcagct	tagcaatgtg	tcacaggttg	ggcgcccgcg	ttccgggctg	540
acgcactggc	tccccggccg	gcgtgggtgt	ggggcgagtg	ggtgtgtgcg	gggtgtgctc	600
ggtagagcgc	gccagcgagc	ccggagcgcg	gagctgggag	gagcagcgag	cgccgcgagc	660
aaccgcagc	gccggccttg	cagggcagct	cggaggtggg	tgggcccgcg	cgccagcccg	720
cttgcaagggt	ccccattggc	cgctgtcccg	cgccctcccg	cccaaaagcg	ggcaaggagc	780
cgagaggctg	cttcggagtg	tgaggaggag	agccggaccg	agccaacgcc	ggggactttg	840
ttccctccgc	ggaggggact	cggcaactcg	cagcggcagg	gtctggggcc	ggcgccctgg	900
agggatctgc	gcccccaact	cactccctag	ctgtgttccc	ggcgcccgcc	cggctagtct	960
ccggcgctgg	cgccctatgt	cggcctccga	cagcgctccg	gagggaccgg	gggagctccc	1020
aggcgcccg	gtgagtagcc	aggcgcggt	ccccgggtcc	cccgaccccc	ggcgccagct	1080
tttgctttcc	cagccagggc	gcggtggggt	ttgtccgggc	agtgcctcga	gcaactggga	1140
aggccaaggc	ggaggggaaac	ttggcttcgg	ggagaagtgc	gatcgagacc	gggaggcttc	1200
cccagccccg	cgggcccggg	gagaacaggt	ggcgcccggc	cgaccaggcg	ctttgtgtcg	1260
gggcgcgagg	atctggagcg	aactgctgcg	cctcggtggg	ccgctccctt	ccctcccttg	1320
ctcccccg	cggcgccacg	ccgggtcggc	cgggtaacgg	agagggagtc	gccagggaatg	1380
tggtcttg	gactgcctcg	ctcggggaag	gggagagggg	ggccacgggt	ttaggagagg	1440
cgcgggagcc	gagaggtggc	gcgggggtgc	caccgttgcc	gcaggctgga	gagagattgc	1500
tcccagtgag	gcgcgtaccg	tctgggagag	ggcttcattc	ttccgcggcg	tccctggagg	1560
tgggaaagct	gggtgggcat	gtgtgcagag	aaaggggagg	cggggaggcc	agtcacttcc	1620
ggagccgggt	ctgatcccaa	cagaccgccc	agcgtttggg	gacgccgacc	tcgggggtgcc	1680
gtggtgcccg	gccccacgcg	cgcgcggggc	tgaggggtcg	ggggcgctcc	tggccgcccc	1740
gctttaacaa	agggtgctcc	tctccacccc	gcgaggaggg	gcagctccgg	agaccgggtc	1800
ttcagcgagc	gggtcttag	cgccggggag	gtctacttcc	ttttggggtt	gccattttac	1860
tattattatt	gccttttttt	tttcttcaaa	aggactggag	actgatgcac	gagggggcta	1920
cggaggcgca	ggagcgggtg	tgatggtctg	ggaagcggag	ctgaagtgcc	ctgggctttg	1980
gtgaggcgtg	acagtttatc	atgaccgtgt	tcaggcagga	aaacgtggat	gattactacg	2040
acaccggcga	ggaacttggc	aggtaaaggg	ggtaccagaa	gcgtaccctc	ctggattgtg	2100
gaaatgcata	acgatggggc	cattgggttg	taaacaaatg	cagtttgaat	caggcgcttc	2160
cctcgccctt	tctggagatg	cgcaaatcat	agagaaaaga	gttactaacc	cagcggtaaa	2220
ccgcctgatc	caagggcctg	ggggtggagg	agaggcagca	gttcagggtc	agattatgat	2280
gcacagtata	ttgatccagt	cccctggaca	aaatcagatt	taattgtccg	tgctaactct	2340
tgtagccctt	tgcccttctg	tgacaacagg	acaaacacta	agattataat	tgcaattgga	2400
gttagctttt	atgtgtgatt	taaacggagg	gtacaaacta	attaataggt	tttaaaaatc	2460
ttagtacttt	accctctatc	taaattttca	gtgtaatttg	a		2501

<210> 10  
<211> 4501  
<212> DNA  
<213> Homo Sapiens

<400> 10

ttcacttgct	ctacaggatt	ccccatggaa	tcttggagtt	tttgaggcga	gagggatcct	60
ggataccact	gagttctatc	tttcatccaa	ttaacacaga	agtggacgcc	tggacaggca	120
aagtgacttg	accaaggcag	gtgcacagct	attctgcaac	attgggaaca	aatctcaggt	180
cttttgattt	tttgtttcca	ctttactctc	ttttcatttc	ccagaaacaa	agttttcatg	240
tgcttttttt	tatagtgata	tgtttggaat	gcattagcta	gtaatttagg	aagggaaaaa	300
aataaacaca	caagagataa	acctgtcagg	aggacaaacc	tgtattgctt	ctgattggct	360

cagaggggtga	ttattatcat	ggtagagaa	tatttaataca	gtgtaagtaa	aattttctctg	420
tgggctgggc	actgtacaaa	gactcaaacg	aatctgtctca	cagatctgaa	aagcagatac	480
gagatctgtg	aatggctggg	gtttccaagc	ccacagtaca	agcatggggc	acaccttaca	540
gcttgaggga	ctgagccctg	aaaatgggca	agttccttca	cttctctgaa	ccttattttt	600
cccacattta	aaacaaggat	gagtagtttc	tgaggtcctt	tttacgactt	ctcttcctac	660
agactctagc	atcctataac	ttgatacaaa	gaggggtggat	atgaactcac	ctttcctaga	720
aaagttccag	gaaagagaa	accaggctcat	cctagtaggt	gtgtagacag	gccagataga	780
tcttgaaaac	tactcagttc	ttcccagatg	tataactcta	tcattgttct	tagctgtcaa	840
gagaaaagcag	gagagcctgc	atcttcattc	tttttttttt	tttttttttt	tttgagagcg	900
gagtctcact	ccatcaccta	ggctagagtg	cagtggcatg	atctcagctc	actgcaagct	960
ccgcctccca	ggttcacgcc	attctcctgc	ctcagcctcc	caagtaactg	ggactacagg	1020
cgcccaccac	cacacctggc	taattttttg	tggtgttagt	acagacgggg	tttcaccatg	1080
ttagccagga	tggtctcgat	ctcctgacct	cgtgatccgc	ccaccttggc	ctctcaaagt	1140
gctgggatta	caggcgtgag	ccaccgcacc	cagcctgcat	cttcattctt	actgtagacc	1200
tcaggttcac	cccacctagc	ttattaagtg	atggtgaata	accaattctt	acatattatt	1260
aggctcatgg	acaccatgac	atccagactg	atgggtgcct	gctgaagggg	gtgaccttag	1320
caggaggact	cccctacgca	aggattcatg	gagtttgctg	tttcttttcc	ttagggtgag	1380
aaccaaaactg	ccttcacacg	gtgggcagag	gggaactgac	tcagggttgg	aataagagag	1440
aacatcccaa	ctgaaaagct	cttggaattc	gctgaacttc	aagacactgt	gtggaccagc	1500
ttaggatagg	gagtgagaag	aaattaacca	aaaggtaatt	tcgttacttt	tcagctggaa	1560
aaaagatcag	attatacttg	tgctttcata	attaagtagc	tgctggaaaa	aaacgcttca	1620
gatgctttct	atgagaaaac	tgctgcttga	agttcagcag	aagttatcta	cttgatactt	1680
atattccagg	caaggccttc	cggtggagaa	aatatcggca	ctttggacaa	aactgaaatg	1740
tgaaaagaaa	gggaagagag	ggcctctatc	atgtaagatg	cttatccaaa	gtggatttgg	1800
tctggaaaagt	cttctaaaac	cttccacatg	actgtggaat	aagtcagtgt	gggcgcgggg	1860
ataagcgaat	ctctcaaatt	ccaccacgta	tgccctcatt	caacctggat	ccttagagtg	1920
gcctccaggg	cactctgctc	aggactcagt	cagctgttgg	ccacacccat	gctctccagt	1980
ctcctgagac	cctatttggg	tctgagaggg	ctaaaaagca	gtgtggctaa	atatcccagg	2040
cctcaaagta	ttcctactgt	ggttggggaa	gcaatagaat	cataccccat	aaaacaatga	2100
aaacagtgtc	agaaaaacat	cgagagacag	aaacatctct	acgagttagg	ccacagttag	2160
agtgaaggca	gggaagggtt	ttaaagctgg	gtggaggggga	caagtcaaaa	agatgtggaa	2220
actggtttcc	ctttcctatg	gctaaagtgc	tcaaagggga	aaaaggagtt	tcaaaaatgt	2280
tcttggaat	accatctctc	acgaattctt	cggcctctgc	tgtcccaatg	tcacttgtct	2340
gagatgtaaa	cagaggagtt	ctgagaaaaga	agctgaactt	gcatttctcc	ctgtttctat	2400
ttgttccaaa	cttgtggcat	ttctaacagg	atgaagcgga	agagaaaagg	agagagacaa	2460
aagtgtagaa	agatggaaga	tcccagctgc	aaatggccat	ttgcagttag	atggaacagc	2520
tgctgacgtt	cagggaaatg	catgtctctc	ttcagatggg	aaggagcagt	ggaaaggggt	2580
gacgagttcc	tggctggcca	ccaatcatcc	catctttctg	tgccggttcc	tcactctggaa	2640
agtgggagtg	atacttgtgc	ttgcttttcc	taccacaaaa	gattattgtg	agagctataa	2700
tacgggtgaga	tacagaatcc	tgctttttaa	aatacaaaagc	agaatcaaga	tgtcaataat	2760
aaggatagta	attgtgttag	ttatctgcaa	tcactatatta	tagctagtcg	tctaggatcc	2820
tggatcggtt	tcttggtttt	actacagttt	tggatcagct	cacccccaaa	tcccttctgt	2880
aagggtggag	ctctgtcagc	catgggcagg	gaaccacttc	ctcttgccct	tctactttct	2940
gtctttcaaa	catgcccagg	gtctttgcac	ttgtgttctc	ccctgcctgg	tacctctctc	3000
ctgtggcctt	ccccagagct	gacccctgtc	tttgtccact	tctcagcgag	gatggcactt	3060
caggagagccc	ttcccttact	atcgcagaga	gagcaggccc	tccccagtca	tgtccaaccc	3120
agaactctgt	tttggtttct	tcatagccct	agcatcacag	aaaatcaccc	tgtgcattca	3180
tggatgtcca	cgggggcaag	ggctttgtgt	tgcttaaccc	agcatcctga	accgtgtttg	3240
ttgaatgaat	acagaacccc	gtttgtctct	ggagagcaca	gaaaacagtc	ttctatcata	3300
tatcatagac	agctgcaaac	agcagatggc	ttcccatatc	ccagagagta	agaaccagag	3360
agagagagaa	agagagagag	tttgggtctt	tctctctctc	gctgtctctc	tccagagaaa	3420
ctggaggggt	agcagtttagc	attccccgc	tggttccacc	aagcacagtc	aaggtctcta	3480
ggacatggcc	acccctcacc	tgtggaagcg	tgctgtctgg	ggtgggtggg	tgttagttgg	3540
ttctggtttg	ggtcagagac	acccagtggc	ccaggtgggc	gtggggccag	ggcgcagacg	3600
agaaggggca	cgagggtccc	gctccgagga	cccagcggca	agcaccggtc	ccgggcgcgc	3660
cccagcccac	ccactcgcgt	gcccacggcg	gcattattcc	ctataaggat	ctgaacgatc	3720
cgggggcggc	ccgcctccgt	taccctttgc	ccccggcccc	gccccctttt	tggagggccg	3780
atgaggtaat	gcggctctgc	cattgggtctg	agggggcggg	ccccaacagc	ccgaggcggg	3840
gtccccgggg	gcccagcgct	atatcaactc	gccgccaggg	cagcggcgca	gagcgggcag	3900
caggcagggc	gcgggcgctc	agacggcttc	tctcctcctc	cttgctcctc	cagctcctgc	3960
tccttcgcgg	ggaggccggc	cgccgagtc	ccgaggcagc	ccgaggcagc	ctgcgtgcgc	4020
cccatcccg	ccgcggggc	actcggaggg	cagcgcggcg	gaggccaagg	ttgccccgca	4080
cggccccggc	ggcgagcgag	ctcgggctgc	agcagccccg	ccggcgggcg	gcacggcaac	4140

tttggagagg	cgagcagcag	ccccggcagc	ggcggcagca	gcggcaatga	ccccttggct	4200
cgggctcatt	gtgctcctgg	gcagctggag	cctggggggac	tggggcgccg	aggcgtgcac	4260
atgctcgccc	agccaccccc	aggacgcctt	ctgcaactcc	gacatcggtg	agcgtcctg	4320
gtgccccgct	cgagcccccac	gctgcagcca	ggactgcagc	gctgcttagg	gaggcagggc	4380
gagccccact	cctttcctct	gccccaggag	aggggcagac	gggggttggg	cggagtggag	4440
aaactcgatg	tccttggggc	ggggcgctgg	catagctgag	aggggaagat	gccctgcaga	4500
g						4501

<210> 11

<211> 7928

<212> DNA

<213> Homo Sapiens

<400> 11

aacgccaagg	acacctgggg	acagagcctc	actcacccta	cacgagacag	ggacacccag	60
ggacagcgcc	tcactcacc	tgcacctgag	agggacaccc	gggggcccga	actcactcac	120
cctacacgtg	acagggacac	ccggggacgg	cgctcactc	accctacacg	tgacagggac	180
acccggggat	ggcgccctac	tcaccctaca	cctgagaggg	acacccagg	acggcgccctc	240
actcacccta	cacgtgacag	agacacccgg	ggacagtgcc	tcactcacc	tacacgtgac	300
agggacaccc	ggggacgggg	cctcactcac	cctgcacgtg	acagggacac	ccggggacgg	360
cgctcactc	accctacacg	tgacagggac	acccggggac	ggcgccctac	tcaccctaca	420
cgtgacaggg	acacccgggg	acggcgccctc	actcacccta	cacgtgacag	ggacacccgg	480
ggacggcgcc	tcactcacc	tacacgtgac	agggacaccc	ggggacggcg	cctcactcac	540
cctgcacgtg	acagggacac	gcggggacgg	cgctcactc	accctgcacg	tgacagggac	600
acccgggggc	ctcgcgtaaa	tcaccctgca	cgtgacaggg	acacccgggg	acggcgccctc	660
actcaccctg	cacgtgacag	ggacacccgg	ggacagtgcc	tcattcacc	tacacgtgac	720
agggacaccc	ggggaccggc	cctcactcac	cctgaacgtg	acagggacac	ccggggacag	780
tgctcactc	accctgcaag	tgacagggac	acccgggggc	cgcgccctac	tcaccctgca	840
cgtgacaggg	acacccgggg	gccgtgcctc	actcaccctg	cacgtgacag	ggacacccgg	900
gggcgcggcc	tcactcacc	tgacagtgac	agggacaccc	gggggcccgc	cctcactcac	960
cctgcacgtg	acagggacac	ccgggggccc	cgctcactc	accctacacg	tgacagggac	1020
acccgggggc	cgcgccctac	tcaccctgca	cgtgacaggg	acacccgggg	gcgcgcctc	1080
actcacccta	cacgtgacag	ggacacccgg	ggacagtgcc	tcactcacc	tacacgtgac	1140
agtgcacccc	ggggaccggc	cctcactcac	cctacacgtg	acagggacac	ccgggggccc	1200
tgctcactc	accctgaacg	tgacagggac	acccggggac	ggcgccctac	tcaccctaca	1260
cgtgacaggg	acacccgggg	acggcacctc	actcacccta	cacgtgacag	ggacacccgg	1320
ggacggcgcc	tcactcacc	tgacagtgac	agggacacgc	ggggacggcg	cctcactcac	1380
cctgcacgtg	acagggacac	ccgggggccc	cgcgtaaatc	accctgcacg	tgacagggac	1440
acccggggac	agcgccctac	tcaccctgca	cgtgacaggg	acacccgggg	acggtgcctc	1500
actcacccta	cacgtgacag	ggacacccgg	ggaccgcgcc	tcactcacc	tgaacgtgac	1560
agggacaccc	ggggacagtg	cctcactcac	cctacacggg	acagggacac	ccggggaccg	1620
tgctcactc	accctgcacg	tgacagggac	acccggggac	cgcgccctac	tcaccctgca	1680
cgtgacaggg	acacccgggg	accgcgcctc	actcaccctg	cacgtgacag	ggacacccgg	1740
ggaccgcgcc	tcactcacc	tgacagtgac	agggacaccc	gggggcccgc	cctcactcac	1800
cctgcacgtg	acagggacac	ccgggggccc	cgctcactc	accctgcacg	tgacagggac	1860
acccgggggc	cgtgcctcac	tcaccctgca	cgtgacaggg	acacccgggg	acggcgccctc	1920
actcaccctg	cacgggacag	ggacacctgg	ggaccgcgcc	tcactcacc	tgacagggac	1980
agggacaccc	ggggacagtg	cctcactcac	cctacacgtg	acagggacac	ctggggaccg	2040
cgctcactc	accctgcacg	tgacagggac	acccggggac	agtgcctcac	tcaccctata	2100
cctgggaggg	acacccagg	acggtgcctc	actcacccta	cacgtgacag	ggacacctgg	2160
ggccgcgcct	cactcaccct	acacctgaga	gggacacccg	gggacagcgc	ctcactcacc	2220
ctacacctgg	gagggacacc	cagggacggg	gcctcactca	ccctacacgt	gacagggaca	2280
cccggggacc	gcgcctcact	caccctgcac	gtgacagggg	cacccgggga	cagcgccctca	2340
ctcaccctgc	acgggacag	gacacccggg	gaccacgcct	cactcaccct	acacgtgaca	2400
gggacacccg	gggacggcgc	ctcactcacc	ctacacctga	gagggacacc	cggggacagt	2460
gcctcactca	ccctacacgt	gacagggaca	cccggggacc	gcgcctcact	caccctgcac	2520
gtgacagggg	cacccgggga	cagtgcctca	ctcaccctgc	acgggacagg	gacacccggg	2580
ggccacacct	caatcacgct	gcacgggaca	gggacacccg	ggggccgcgc	ctcactcacc	2640
ctacacgtga	cagggacacc	tgggggcaac	gcctcactca	ccctgcacgt	gacagggaca	2700
cccggggacc	acgcctcact	ccctgcataa	gccaggggca	gattgtgacc	tcctctgaa	2760
tcagagaaca	gcaatgacag	gcagagtcc	gatcagagaa	ctcaaactct	cctcaacgaa	2820
ggaagctgga	gcacaaaaag	caaaactggg	ttgcatgacg	cttatctgac	tcggcggtgg	2880

ccacctgagc	cgcagcaggt	gtgaggcagc	tgccgttcga	tgggtagggg	cttccagtca	2940
cgcaagacgc	agcatttcaa	gcaacctgct	gtaaacaccg	ccgagtttagc	aattctgcac	3000
tgtacacaga	aaacggtgtt	aggagtgcc	atctcatgtt	atatgacttt	tgccaccata	3060
aaaagaaaaa	aagaaaaaaa	agagccccaa	gaaggtcacc	ctccttgtct	gcatggccgg	3120
aagtcttaca	tgtcttggga	gtttgtgggg	agggggtgaa	atcgggactt	cttctagctg	3180
ccacggtagg	gcctgggagc	actgggagcc	aaaagggggc	tggagcggag	gttccctcaac	3240
atcaaatacca	gaaaaacagg	gtggggacac	ggcagggccc	agcagcacca	tcccctgaac	3300
acccacaaac	actgtccctt	cctcagcagg	tggagccatc	tgctgtcctc	tgctcccatg	3360
tggccctctt	catacctaaa	gatgggacca	ggatctgtgc	tggagaacag	tcttatctcc	3420
ctccctctac	cctgtcctgg	cacaatcaac	gaacactttt	tttttttaaa	gacagagttt	3480
cactcttgtc	gcccaggctg	gagtacaatg	gcacaatctc	agctcactgc	agcctccgcc	3540
tcctgggttc	aagtgattct	cctgcctcag	cctcccaagt	agctgggatt	acaggcacac	3600
accaccatgc	ccagctaatt	tttgtatttt	tagtacagat	agggtttcac	catgttggtc	3660
aggctgggtc	caaactcctg	acctcaggtg	atccacctgc	ctcagcttcc	caaagtgtctg	3720
ggattaccgg	cgtgagccac	cgcacctggc	cgtcaacaca	caattaaatc	ttaaacacaa	3780
acctgcata	tggctgacca	cgtgcacctg	caaaaccctt	acctcccacc	cccaggaaga	3840
gggggttctc	gtccccact	ctcattccca	cccttgaat	tgcaagagg	attataggta	3900
acctgcagc	accttcgcca	gagcgtctgt	gcttccagac	acttctcccc	attgcccga	3960
acccggctcc	actgccgcgc	ccagcctcct	ctgttcactg	ctctggcctc	ggcgcttggg	4020
aaccgcgtgt	ccatcaaaac	gtgaagggtg	acctcgtaag	tttatgcaaa	ctggacagga	4080
gggagagcag	aggcagagat	caccgtgtcc	actcgacgtc	ctgagcgaaa	agccacgtgt	4140
gcccacgtga	cgatggagac	aggaggacca	gggctctgcc	tgcccccttt	tctgagcccc	4200
tactgcattc	agctctgggg	cctgggccct	cgacggccac	cacctcctca	cctgggctcc	4260
tgcgagacca	agcgagctcc	cgcacgtcca	tcttccacgt	cagctcctgc	agcgagagct	4320
tggcatgctt	ccccagggag	atgaacttct	tgggtgttct	gaggaagcgg	cgttcgttgt	4380
gcctggagcc	ccagaggcct	gggggcacca	gcccggcgag	gcaggcccgc	acgaagccgt	4440
acacctgcca	ggggctgctg	tgctggcgga	gcagctgcac	caggcgacgg	gggtctgtgt	4500
cctcctcctc	gggggccgcc	acagagccct	ggggcttctc	ccgggcacag	acaccggctg	4560
ctggggtgac	cgcagctcgc	agcgggcagt	gcgtcttgag	gagcaccctg	taggggcact	4620
gcgcgtgggt	cccaagcagc	tccagaaaca	ggggccgcat	ttgccagtag	cgctggggca	4680
ggcggggcaa	cctgcgggga	gtccctggca	tccagggcct	ggaaccaga	aagatgggtc	4740
ccacgagcct	ccgagcgcca	gtcaggctgg	gcctcagaga	gctgagtagg	aaggagggcc	4800
gcagctgctc	cttgtgcct	gaggagtaga	ggaagtgtt	ggtctcggcg	tacaccgggg	4860
gacaaggcgt	gtcccaggga	cgtgggtggc	gcgatgtgga	tggggggccc	gcgtgggtgt	4920
ggcgggccac	ggatgggtgg	gagtggcgcg	tgccagagag	cgcaccctcc	aaagaggtgg	4980
cttcttcggc	gggtctggca	ggtgacacca	cacagaaacc	acggtcactc	ggtccacgcg	5040
tcttgcgccg	gtggggccag	gaacccctgc	caacgggcgt	ccgctccggc	tcagggggcag	5100
cgccacgcct	gggctctttg	ggcaacggca	gacttcggct	ggcactgcc	ccgcgcctcc	5160
tcgcaccgcc	ggctggcagg	cccaggggga	ccccggcctc	cctgacgcta	tggttccagg	5220
cccgctcgca	tcccagacgc	cttcgggggtc	cactagcgtg	tggcgggggc	cgggcctgag	5280
tggcagcgcc	gagctggtac	agcggcgggc	cgcacacctg	gtaggcgag	ctgggagcca	5340
ccagcacaaa	gagcgcgcag	cgtgccagca	ggtgaaccag	cacgtcgtcg	cccacgcggc	5400
gcagcagcag	ccccacgcgc	ccgctccccc	gcagtgcgtc	ggtcaccgtg	ttgggacagt	5460
agctgcgcac	gctgggtgtg	aaggcctcgg	gggggcccc	gcgggccccg	tccagcagcg	5520
cgaagccgaa	ggccagcagc	ttcttcgcgc	cgcgctcgca	cagcctctgc	agcactcggg	5580
ccaccagctc	cttcaggcag	gacacctgcg	ggggaagcgc	cctgagtcgc	ctgcgctgct	5640
ctccgcatgt	cgtggttcc	ccccggccgc	cctcaacccc	agcgggacgc	cgaccccggg	5700
gaggccacc	tggcggaagg	agggggcggc	ggggggcggc	cgtgcgtccc	agggcacgca	5760
caccaggcac	tggggccacca	gcgcgcggaa	agccgcgggg	tccccgcgct	gcaccagccg	5820
ccagccctgg	ggccccaggc	gccgcacgaa	cgtggccagc	ggcagcacct	cgcggtagt	5880
gctgcgcagc	agggagcgca	cggctcggga	gcggggagcg	cgcggcatcg	cggggggtgg	5940
cggggccagg	gtctccacag	tgccagcag	gacgcagcgc	tgccatgaaac	tcgcgcgcgc	6000
aggagagggc	ggggccgcgc	aaagggaagg	gaggggctgg	gagggccccg	agggggctgg	6060
gccggggacc	cgggaggggt	cgggacgggg	cggggtccgc	gcggaggagg	cggagctgga	6120
aggtgaagg	gcaggacggg	tgcccgggtc	ccagtcctct	ccgccacgtg	ggaagcgcg	6180
tcctgggcgt	ctgtgcccgc	gaatccactg	ggagcccggc	ctggccccga	cagcgcagct	6240
gctccgggcg	gacccggggg	tctgggcccgc	gcttccccgc	ccgcgcgcgc	ctcgcgctcc	6300
cagggtgcag	ggacgccagc	gagggcccca	gcggagagag	gtcgaatcgg	cctaggctgt	6360
ggggtaaccc	gagggagggg	ccatgatgtg	gaggccctgg	gaacaggtgc	gtgcggcgac	6420
cctttggccg	ctggcctgat	ccggagaccc	agggctgcct	ccaggtccgg	acgcggggcg	6480
tcgggctccg	ggcaccacga	atgccggagc	tgaaggggag	gacggaggcg	cgtagacgcg	6540
gctggggagc	aacccgagga	cgcattgtc	cctggacggg	cacgcgggac	ctcccggagt	6600
gcctccctgc	aacacttccc	cgcgacttgg	gctccttgac	acaggcccgt	catttctctt	6660

tgcagggttct	caggcgggcga	gggggtcccca	ccatgagcaa	accaccccaa	atctgttaat	6720
cacccaccgg	ggcggtcccg	tgcagaaagg	gtgggaaatg	gagccaggcg	ctcctgctgg	6780
ccgcgcaccg	ggcgccctcac	accagccaca	acggccttga	ccctggggccc	cggcactctg	6840
tctggcagat	gaggccaaca	tctggtcaca	tcccgcgcgc	acagggtgga	gggcaacctc	6900
gggggtccagg	cacctggctc	caagcctcgg	actgcagagc	taggaggccc	gacttccagc	6960
ccagcagtag	aagccacacg	gccactggtc	ccctccagac	ctgggggccc	ggcacaaccg	7020
caggacagct	gaggacttcc	caggaatcca	gactccgggt	tgctcaagtt	tggatctaag	7080
gggcgagaaa	cttctgggtc	tcccagggcc	ttgcagggat	gctgtagctg	aggtcggcaa	7140
acactgaaat	gctaacaaac	gcaaccttaa	atgtaacctt	tcctactttc	agaaactgcc	7200
ggaggaaatt	gctttatttta	tggagctagc	atltgaacag	gcctcgcacc	ctccctgggc	7260
tgtcacgctc	gctggagggt	agcctcgtct	tgtaaatact	taggattaca	ggcgcgtctt	7320
ctagaaatcc	ccttagtgat	ccctaagcct	ttttaaagg	ctgtgtttgt	gaattgtctc	7380
tgccactagg	gcaaaggggc	ggtttggaag	atltgttcca	acaaaagtta	agttgtagct	7440
tacactgggt	ctctgcagag	aagccaacat	agaaaacaca	atlttaaaaag	aggggaagaga	7500
agaaatggaa	gcagaagatt	atgctggagt	aattaacacc	atgtgcatgg	cgaggaaacg	7560
cctcccgcca	ttcaatgaag	atcgctgata	cccagaagac	accccagtat	tatgggtgca	7620
gttagtgtgt	ctttgaaaag	ctgatgatgt	cttagtcatc	acagtgtaaa	acatcaagag	7680
tgttctaaca	acaataaaaa	aattctatca	ttggcttaaa	acaccacaac	acttgagtg	7740
ggtgagcttc	ctacctcaga	cccagatggt	tctaaacaga	gtaaattctg	agctgggcat	7800
ggtggctcac	acctgtaatc	ccagcacttt	aggaggcaga	ggcaggtgga	tcactctgag	7860
tcagaagttc	gagaccagcc	tggccaacat	ggtgaacccc	accccacccc	ccgtctctac	7920
taaaaata						7928

<210> 12

<211> 3190

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 12

aggagtttaa	gattagtttg	gttaatatga	tgaatttttg	tttttattaa	aaatataaaa	60
attagtttagt	cgtgggtggcg	tatgtttgta	atlttagtta	tttaggaggt	tgatagagga	120
gaatcgtttg	aatttaagag	gcgaagggtg	tagtgagtta	agaatatatt	attgtatttt	180
agtttggggcg	atagagtagg	atltcgtttt	aaaaaaaaaa	gagttgggtta	gtgttaaatg	240
tttagtatag	agattgggat	agtaattttt	aatgttttagt	atlttattgtt	attatttttt	300
tttttttttt	ttttttgaga	tagagttttg	ttttgtcgtt	taggtttggag	tatagtggcg	360
cgatttcggt	ttattgtaag	ttttattttt	taggttttatg	ttattttttt	gttttagttt	420
ttcgagtagt	tgggattata	ggcgtttatt	attacgtttg	gttaattttt	tgtattttta	480
gtagagacgg	ggttttattg	cgttagtttag	gatggtttta	atltttttgat	ttcgtgattt	540
gttcggtttcg	gttttttaaa	gtgttgggat	tataggcggtg	agttattatg	tttggtttta	600
ttgttattat	ttttattttt	tattttttgta	tagagtattt	atggtttaag	aaatattttgt	660
tattttaatt	gtatgggagt	tttataatag	tataggggaga	tatttttgat	tattattttt	720
attaggagggg	tggagaaatt	gaggtttttg	gaggtgggtt	tgatttaggg	aattaatttg	780
ttgatttatt	aatttatgaa	gtttttatagt	taaaaaagat	tagattaaaa	aatgagaatt	840
tagtaaaagg	gttgaggtag	gaggatcggt	tgagttttaga	aatttgagat	tagtttcggt	900
aatatagtga	gatttttttt	ttagaaaaat	tttttaaaaa	attagggtcgt	tcgaggtaga	960
gtgtagtggt	ttacgtttgt	aatttaatat	tttaggaggt	tgaagagggt	ggattatttg	1020
aggttaggag	tttttagatta	gtttgggttaa	tatgggtgaaa	tttcggtttgt	attaaaaata	1080
taaaattagt	cggtgtgggtg	gtatacgttt	gtagtttttag	ttattttaata	ggttgagata	1140
ggagagtttt	ttgaattcgg	taggcggagg	ttgtagttag	tcgagatcgt	gttattgtat	1200
tttagtttg	gtaagataga	gcgagatttc	gttttaaaaa	atataaataa	aataaataaa	1260
taaaaaatta	ggttggttagt	ttagtgggtt	atggttttata	tttgaaattt	tagtattttg	1320
ggaggttaa	gtaggaggat	cgtttttagt	taggagttcg	agattaggtt	gggtaatat	1380
gggagatata	gcgttttttat	tgttttttgtt	cgtttcgatt	tgttttttta	taaaaaggta	1440
aaagaaaaaa	aaattagttt	ggcggtgggtg	tgtgtatttg	tatttttagt	tatttagagag	1500
gttgggggtta	gaggatcggt	tgagtttagg	agtttcgaggt	tgtagtgagt	tgtgatcgta	1560
ttattgtatt	ttagtttggg	tgaagagtg	agattttatt	tttaaaacga	ataaataaaa	1620
aattttaaaa	aataaaagaa	tttagtttaag	tgtaaaagtt	ttttttgatt	ttaggtttta	1680
gtgagttatc	ggcggggttg	ggattcgaat	ttagtggat	tagaatcgtg	taggttttat	1740
aattttattta	gatttttagta	atlttaggtt	agagggttat	cgcgttttatg	cgagggtcggg	1800

tgggcgggtc	gtagtattcg	ttttggggag	gggttcgcgt	tggtgattgg	ttgtgggtcgg	1860
taggtgaatt	tttagttaat	tagcgggtacg	gggggcgggtg	ttttcgggggt	ttatttggtt	1920
gtagttacgt	atTTTTTTTT	agtggcgctcg	gaattgtaaa	gtatttgtga	gtttgcggaa	1980
gtagtttag	atTTtagttc	gttttagttc	ggttcgtatc	gatcgtatc	ggcgtttgtt	2040
ttcgttcggc	gttttcgggt	agttatgggt	ttttggagtc	gtagtttttc	ggcgttgttg	2100
ttgttgttgt	aggtattttcg	gattttttga	tttgcgagg	acgtattcgg	gtcgtaaagt	2160
tcgcgtttta	gttttgcggt	tttttttttt	tcgtcgttat	cgtttttttt	tttttaagaa	2220
agttcgggtt	ttgaggagcg	gagcgggttg	gaagtttcgc	gcgtttcggg	tttttttagtg	2280
atgggagtg	gggggtgggtg	gtgaggggag	agcgcgggtt	ttttgttttt	tttagcgtag	2340
atcgaggcgg	gggcgttttg	tcgcggaggt	cgcgggggtg	gttcgcgcgg	gcgggtgggg	2400
cgtgaagcgg	ggtgtagggg	gtggggtgtg	gagaaggggt	gttttggtgt	aagtcgagg	2460
ggagtttaga	gtcgtgggga	cgattttcga	gggaaggaga	gggtattcgt	tagaaataaa	2520
ggtatttgtt	atgttaagaa	aggtcgtaaa	taggagtgag	ggtttcgggg	ataagaaagt	2580
gaggtcggag	gaggtgggag	cgtttttcgt	tttgaggagt	ggtgtatttt	cggtttaagg	2640
aaagtggggt	attggagaat	aaagatattt	ttaataaaaat	gagaaaggag	attgaaagg	2700
aacgggtgggt	taggttttga	gggggtgatt	cggcgggttt	ttttcgggag	tttttggggg	2760
ttcggcggtc	gtaggtttcg	gggtggggga	gggtgacgtc	gttggtcgtt	cgtttcgggg	2820
ttgcgggttg	gggttttttt	ttaatctcga	cgtcgggagc	gagggagggg	cggcgttggt	2880
ggtttcgggtg	agtaggagg	aatttttcga	gttattcggg	tttatttatt	ttttttttat	2940
tttaggtttt	tttttggttt	tgtaggagt	cggagttttg	ttattttggt	tttgacgtcg	3000
agagttatac	gtttacgggtg	tttcggcggt	atttggagag	aggtcgcgtt	ttgggtagag	3060
gtgagggcgc	gttgctgggtg	tttttgggag	gagtagggag	gggttggaag	gggggtcgaga	3120
aattgtattt	ttatatTTTT	gggttgtaat	gggtaagttt	tttttttggt	ttaaacgata	3180
ttttttgga						3190

<210> 13

<211> 3190

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 13

ttttaagggg	tgctgtttga	gttaaggagg	gagtttgttt	attgtaattt	aggggtgtgg	60
gagtgttaatt	tttcgggtttt	tttttaattt	ttttttattt	cgttttagga	tatcggtagc	120
gcgtttttat	ttttgttttag	gacgcgggtt	tttttttaggt	ggcgtcgggg	tatcgtgaac	180
gtgtagtttt	cggcggtaaa	gttaggggtg	taggggttcg	gttttttggt	gagttaaag	240
gagatttggg	gtgggggaaa	gtagatgga	atcgggtgat	tcggagggtt	tttttttgtt	300
tatcgaaatt	aatagcgtcg	tttttttttc	gttttcggcg	tcgggattgg	gggaggattt	360
tagttcgtag	tttcgggacg	ggcgggtagc	gacgttattt	ttttttattt	cgaaatttac	420
ggtcgtcgag	tttttaggaa	ttttcgggag	ggggctcgtc	agttattttt	ttaaagattta	480
gtttatcgtt	tttttttagt	tttttttttt	attttatctg	agatgttttt	attttttagt	540
attttatttt	tttttagatc	ggaatgtatt	atttttttag	gcgaggggag	tttttatttt	600
tttcgatttt	atttttttat	tttcgggatt	tttattttta	tttacgattt	tttttggtat	660
ggtaggtgtt	tttattttta	cggatgtttt	tttttttttt	tcgaagatcg	tttttacgat	720
ttttgggttt	ttttcgattt	gtattagggg	attttttttt	tatattttat	tttttatatt	780
tcgttttaac	tttttatcgt	tcgcgcgagt	ttatttcgcg	gatttcgcgg	ttagacgttt	840
tcgtttcggg	ttgcgttgga	gggggttaga	aagtcgcgtt	cgttttttat	tatttatttt	900
ttatttttat	tattgggggg	ttcggagcgc	gcgaggtttt	taggtcgttt	cgttttttag	960
gatttcgaatt	tttttggaag	aagggaagcg	gtgacgacgg	gagaggaagg	ggcgtagggg	1020
tggggcgcgg	agtttcgggt	tcgaatgcgt	ttttcgttaag	ttaggggatt	cggggatttt	1080
gtagtagtag	tagtagcgtc	gagaggttgc	ggttttaagg	gtttatggtt	ggtcggggac	1140
gtcagagcag	ggtaggcgtc	gggtgcgggt	gggtcgggtc	gggttgagag	gggttgaggt	1200
ttgaattgat	tttcgtaagt	ttataggtgt	tttgtagttt	cgacgttatt	gagagggggg	1260
gcgtggttgt	agttaggtga	gtttcggagg	tatcgttttt	cgtatcgttg	attggttgag	1320
ggtttatttt	tcggttatag	ttaattagta	gcgcggattt	tttttttagg	cggagttgac	1380
ggttcgttta	ttcggtttcg	tatagacgcg	gtgatttttt	agtttgaggt	tgtaggggtt	1440
taggtggggt	atgggatttg	tacggttttg	attttatttg	gttcgaattt	tagtttcgtc	1500
ggtggtttat	taagattttg	gattagaaag	gggttttata	tttggttgag	tttttttgtt	1560
ttttgggatt	ttttgtttgt	tcgttttgga	gatgggggtt	tattttttta	tttaagttgg	1620
agtgtagtgg	tgcgattata	gtttattgta	gtttcgaatt	tttggtttta	agcggttttt	1680



tggttttagt	tttttagta	gttgggagta	taggtgtata	ttattacgtt	aggttaattt	1740
tttttttttt	tgtttttttg	tagagagata	agtcggggcg	gataggggta	gtgggggcgt	1800
tgtgtttttt	tgtattgttt	agtttggttt	cgaatttttg	ggttgaagcg	atttttttgt	1860
tttggttttt	taaagtgtta	ggatttttagg	tgtgagttat	gagttattga	gttagtagtt	1920
taattttttg	tttgtttggt	ttgtttgtat	tttttgagac	ggagtttcgt	tttgttttgt	1980
ttaggttgga	gtgtagtggt	acgatttcgg	tttattgtaa	ttttcgtttg	tcgggtttaa	2040
gagatttttt	tgttttagtt	tattgagtag	ttgggattat	aggcgtgtgt	tattatatcg	2100
gttaattttg	tatttttagt	atagacgggg	ttttattatg	ttggttaggt	tggtttgga	2160
tttttgattt	taggtgattt	atttttttta	gttttttgaa	gtgttggtt	ataggcgtga	2220
gttattgtat	tttgtttcga	gcggtttaat	tttttaaaaa	atttttttag	agaggggatt	2280
ttattatgtt	gtcagaggtt	atttttaaatt	tttgaattta	ggcgattttt	ttgtttttagt	2340
ttttttattg	agtttttatt	ttttaattta	gtttttttta	attgtagagt	tttatgggtt	2400
agtgagttag	taaattgatt	ttttaggtta	ggattatttt	ttaaagtttt	agttttttta	2460
tttttttaatt	gggaataaat	attagaaaatg	tttttttatg	ttgttggtgg	atttttatat	2520
aattaaaaatg	ataaatgttt	tttgagttat	aaatgttttg	tatagaagtg	aggggtaaaa	2580
atagtaataa	tagggtttagg	tatgggtggt	tacgtttgta	atttttagtat	tttgggaggt	2640
cgagggcggt	agattacgag	gttaggagat	tgagattatt	ttggttaacg	tagtgaaatt	2700
tcgttttttat	taaaaatata	aaaaatttagt	taggcgtggt	ggtgggcgtt	tgtagtttta	2760
gttattcggg	aggttgaggt	aggagaatgg	tatgaatttg	ggaggtggag	tttgtagtga	2820
gtcagatcgc	cgttattgta	ttttagtttg	ggcgatagag	taagattttg	ttttaaaaaa	2880
aaaaaaaaaaaa	aaaaaatagt	aataataggt	gttggatatt	gaagattatt	gtgttagttt	2940
ttgtgttaag	tatttgatat	tgattagttt	tttttttttt	gagacggagt	tttgttttgt	3000
cgtttaggtt	ggagtgtaat	ggtgtgtttt	tggtttattg	taattttcgt	tttttggtt	3060
taagcggttt	ttttttatta	gttttttgag	tagttgggat	tataggtatg	cgttattacg	3120
attggttaat	ttttgtattt	ttagtagaga	tagggtttta	ttatgttggt	taggttggtt	3180
ttgaattttt						3190

<210> 14

<211> 2301

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 14

gtcgttagtt	tttcgtgtaa	ttttattttt	tggaaaagtg	gaattagttg	gtattgttta	60
gcgtgatttg	tgaggttgag	ttttaaatagt	ttaaagaagt	aaatgggatg	ttattttcgc	120
ggggttcgtt	tttcgcgagg	tgtttatttc	gtatttgtaa	tgtaaaacga	gggagcgta	180
ggaaggaatt	cgttttgtaa	agttattggt	tttggttatt	agtttttatt	taatgttttc	240
gtgatgttgt	tgttgattta	tttgggaagt	tggttggttg	gcgaggtaga	gttttttttt	300
aaagtttggt	ttttacggaa	aatatgttta	gtgtagtcgc	gtgtatgaat	gaaaacgtcg	360
tcgggcgttt	ttagtcggat	aaaatgtagt	cgagaatttc	gttcgttttg	tgcgtttttt	420
tgttttaggt	aggggaagagg	ggtgtcggg	cgcgttttgc	gtttcgtttt	tgtattcggg	480
tcgttcggta	cgggtagggg	gaggggggtt	tcgggggggtc	gggggttttcg	gtcgcggcgg	540
cgaagataga	tcgggggttcg	gtagggaggt	tatttcgagt	ttagagattt	taggtatttt	600
ttatatatag	gttttttattt	tggcgtgcgt	gtgtgtgtgt	gtgtgtgtgt	gtgtgtgtgt	660
gtgtgtgtgt	gtacgttcgt	taacgggagg	aggagagagt	tttttagttt	tttttgtag	720
taggggcgat	attttcgttt	atattaagtg	gggtaatttt	ggtttttttt	ttcggaggtt	780
cggtgtattg	gagaaagatt	tagttagagg	cgattttaac	gagtcgcggt	tttttttagt	840
ttaacgttta	gcggtcgaag	cgttgttcgg	gttcggattg	cgggatgcgg	ggttggagag	900
gtcagtagag	tattatcgat	tttttagggc	gttcgggttt	tttggtatag	ttcggttggt	960
cgttggaagg	cgtttcgggg	tagtagagag	tttttagttc	gttggtgttg	tcgtttaaag	1020
gcgtcggcgt	cggtcgtatt	cgtatcgggg	tttttttgtt	tttagatttc	gggttcgaaa	1080
gggtcgggag	gtgttttttcg	ttagggcgta	ggtttttagt	tttcgtattt	ttattgttta	1140
gttagttgga	gtttcggtta	gatttcgggt	tgtcgttttt	gttggttttt	ttgagcggga	1200
gcggagcgta	gagaaaagtt	taagttttgt	ttattcgggt	tgtagttggt	tgtaaatttt	1260
tagagcgtaa	cggcgcgagg	gaagggtacg	ttaattagga	gagggggcga	gggagatgcg	1320
gttcgtttgt	agttattttt	gtatttttaga	gatttcggga	agtttgagt	taggaaagta	1380
gcgtttcgag	gttaggtttg	gggtgttggt	cgttgcgggg	ggtacgtttt	gcgttggtta	1440
ggggtttgtg	gtttcggaga	gtatttcgat	ttagtttttt	atcgtttttt	tggtaggcgt	1500
tgggatttgg	agtgagttgg	tagtttgtaa	gtgggtggat	aagagttagg	gtagggtagg	1560

gtcgggtaga	gtaaggaggg	aaagagatag	ggagtgtttt	agggtgttag	gaatgagtgt	1620
tgagtttttg	gtcgggtag	aggtttaggt	gagagtgtgc	gggtgaaagg	taggggaagg	1680
gagttgggtt	tttaggtagg	gattgttttg	gatggggaga	ttggtgtaga	tttttaaggg	1740
agattattgt	tagagtaatg	ttgggtttag	attttgga	tgggttaata	ttttagaaat	1800
gtagtgtagg	gtgatagtat	taggggagat	ttaatgttgc	ggttggttag	ttcgttttta	1860
agtttttgat	tttttttttg	gatatatagt	ttcgattaa	gattgttttag	ttatagtttt	1920
ttttttatta	ggtttttttg	gttgattatt	ttgggttttt	tatagttttg	agttttgtta	1980
tggattttta	gtttggttgt	gaattagttt	tttagatgtt	ttgtatttta	gagattttta	2040
ggttgtagtg	gtgtatatat	attttaattt	agtaaggcgg	tttgaggtat	gttttagata	2100
gaaaggattt	agatagattt	tttttggtat	ttgttagtgg	tattaattcg	ggtaagttgt	2160
ttaatTTTTT	tgagtTTTTT	agttttttat	tgtaaaataa	tttggtgttt	tttttaggatt	2220
gttgagtggg	taggattgta	tttaatagga	tgttttatgt	aatgtatgtt	agtttgggag	2280
ttgtcgggtg	ttgagagtat	t				2301

<210> 15

<211> 2301

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 15

agtgttttta	gatatacgata	gttttttagat	tggtatgtat	tgtataggat	attttgttga	60
atgtaatttt	atttatttag	tagtttttag	aaggtagtag	attattttat	aatggagaat	120
ttggaagtgt	aaagaggtta	aataatttgt	tcgggttggt	attattagta	gatggtagga	180
aggatttggt	tgaatttttt	ttgtttgagg	tatgttttaa	atcgttttgt	taaattgggg	240
tatatgtata	tatatatagt	tttgggtttt	ttagggtata	ggatatttgg	aaaattgggt	300
tatagtttag	tttgggattt	atggtaagat	ttaatgttgt	agggatttta	agataattaa	360
ttagaaaagt	ttggtagaaa	aggagttata	attgggtagt	ttttaatcgg	gattgtatat	420
ttatgaaaga	agttaggagt	ttgggagcgg	gttttagtag	cgggtatttg	aatttttttt	480
ggtattatta	tttattattg	tattttttgag	atgttagttt	attttttaa	tttaaattta	540
atattgtttt	aatagtgggt	tttttttagaa	gtttgtatta	gtttttttat	tttagatagt	600
ttttattttg	gaatttaatt	tttttttttt	gtttttttat	cgtaaatttt	tatttgagtt	660
tttatttcgg	ttaggaaattt	aataatttatt	tttagtattt	tgaggtaatt	tttggttttt	720
ttttttttta	ttttgttcgg	ttttgttttg	ttttgggttt	tattttattta	tttgtaggtt	780
gttagtttat	tttaagtttt	aacgtttgtt	agagaggcga	tgggggattg	gatcgggggtg	840
tttttcgaaa	ttataggttt	ttgagtagcg	tagggcgtgt	ttttcgtagc	ggtaggtatt	900
ttaggtttgg	tttcgggagc	ttgttttttt	gtatttaaat	ttttcgaaat	ttttgaggtg	960
tagaggtgat	tgtaggcgga	tcgtattttt	ttcgtttttt	tttttggttg	gcgtgttttt	1020
ttttcgcgtc	gtggcggttt	gagggttaat	aagtagttgt	agttcgggtg	ggtaagggttt	1080
gaattttttt	ttgcgtttcg	ttttcgttta	gggaaggtag	tagaggcggt	agttcgggat	1140
ttggtcggag	ttttagttag	ttggataata	gggtgctggg	gggttggggg	ttgcgttttg	1200
gcgggggata	cgtttcgggt	ttttcgggtt	cgggttttgg	gagtaaaagg	atttcgatgc	1260
gggtgcggtc	ggcgtcggcg	tttttgagcg	atagtagtag	tcgggttgag	gttttttggt	1320
gtttcagagg	gttttttagc	gggtagtcgg	gttgatttag	gggttcggg	cgttttgga	1380
agtcggttgt	gtttgttcgg	tttttttagt	ttcgtatttc	gtaattcgga	ttcgagtagc	1440
gtttcgggtc	ttgggcgttg	ggttggggaa	aatcgcggtt	cgttgagtc	gtttttaatt	1500
gagttttttt	ttaatgtatc	gagtttttcg	aggagggaa	ttaaagttatt	ttatttgatg	1560
tgggcgagaa	tgtcgttttt	gttagtaaaa	aaggattggg	agtttttttt	ttttttcgtt	1620
aacgaacgta	tatatatata	tatatatata	tatatatata	tatatatata	tacgtacgtt	1680
agagtgagg	tttgtgtgtg	gggggtgttt	aggatttttg	ggttcggaat	gaatttttta	1740
tcgagtttcg	atttgttttc	gtcgtcgcga	tcggaggttt	cgatttttcg	aaagtttttt	1800
tattttgttc	gtgtcggg	atcgaatgt	agaaacggg	cgtagagcgc	gttcggtagt	1860
tttttttttt	tatttgggat	aggagaacgt	atagaacgag	cggagttttc	ggttgatttt	1920
tgttcgatta	gaagcgttcg	gcggcggttt	tatttatgta	cgcggttgta	ttgagtatat	1980
ttttcgtggg	agttagggtt	tgaggagagg	ttttgtttcg	ttagttagtt	aattttttta	2040
atagattagt	agtagtatta	cgaaggtatt	gggtagaggt	tgatgattag	gattaatggt	2100
tttataagac	ggattttttt	ttaacgtttt	ttcgttttgt	atggtagata	cgggggtgag	2160
atttcgcgag	gagcaggttt	cgcggaggtg	gtattttatt	tgtttttttg	gattgttggg	2220
gttttagttt	ataaattacg	ttgggtaatg	ttagttgatt	ttattttttt	agagaatgga	2280
attgtacggg	ggattggcgg	t				2301



<210> 16  
<211> 2501  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 16

cggatttagt	tttcgggagt	tgttttcgtc	gatttttttt	gtcgcgattt	gattcgcggc	60
gattgcgttg	tttttttggt	gttttttttcg	tttttcgtagg	cgcgcggggt	tattattttac	120
gcgcgtattg	taggtttttg	cgtacgacgt	tttagatgaa	gtcgttatag	aggcgtattt	180
acgtgtgcgt	ggcgggtttc	gcgggttgga	agcggtggtt	acggttaggg	attagttgtc	240
gtgtgggggt	gtacgcgggt	tttcgcgcga	tgcgtagcgc	gttggtacgt	tttagtcggg	300
tgcgggtttt	tttagcgcgt	ttagcgggtg	ttagttttcg	tagtttaatg	agtttagggt	360
ttttcgatat	ggttcgggtg	ggttcgtgtt	tcgttggttt	tgggcggttag	taagcgcggg	420
tcgggcgggg	ttatagggcg	ggttttcgatt	ttagcgtttt	ttttaggatt	tagattgggc	480
ggcgggaagg	agttgaggag	agtcgcgtaa	tggaaatttg	ggtgtaggga	ttgtgggggt	540
cgaaggcggg	gttgggcgcg	ttttcgtaga	gttttttttcg	ttttgttttt	tttttttttt	600
ttcgtttttt	ttttatat	tatttcggag	ggttataacg	acggcgatcg	taaagtatta	660
cgcgagagata	ttcgtgtttt	tggagggttag	ttttattgtg	ttagaggaag	agggttttta	720
tattcgtttt	tgggtttttt	ggttcgggtt	gttgaagtaa	tatatattgt	ttattttattg	780
ggtggggttag	gaagtttcga	gtttttattt	ggggtgagga	ggaggagat	cggtagtag	840
ttttatcgtt	cgttttggtt	tttattgcgg	agattggggg	ttcggtagag	gttggatcgt	900
gatttttagg	tttaggggtg	tattttgggt	ggattttttt	ggtatgggtg	gtcggttttt	960
agtaattgta	gtttttattt	ggttttggtt	ttttgggttg	ttaggatata	agttttttta	1020
tgtttttttt	agtgtttgat	ttggtatttt	ttgtaggtag	gtgggtattg	aggatggtaa	1080
tgtatgtggg	ggatgtggga	gtagggttta	gaggtttaag	gttttaggat	attttttattt	1140
gtagtaatat	tatttatatt	ggtatcgtga	gtagcgttta	gaagtttttg	tattgtagta	1200
agtatagcgg	ggtcgttttt	gagttattgt	tttttagtata	tttagtttgt	aggttttagt	1260
ttatttgggg	gaaagttagg	aaggtttgat	tggttttgga	aggtgggggt	attttattta	1320
tatttatggt	ttttgtattt	tttttatatt	ttttgttatt	tttatagggt	ttattttcgc	1380
gtttgtagtc	gtaggttttg	ttttgagggg	ttgaatatat	gttggagttg	gtgtttggta	1440
attgtttggt	atttggtttt	gttttttcgt	tttagtcgtt	tttagatttt	tgggatttag	1500
gagagagaag	tggagagtgg	taggaagggt	ttggtaaagt	gggatatgtg	ttttgagtag	1560
ttaatttttt	agtgtttatt	tgttttaata	ttagggtttt	tttagggagt	tgggttttag	1620
ttagggttag	atgggttagg	aaattttgta	agtgggttag	gttgggtagt	tgggttagta	1680
gtgtgtttgt	gaggaagggt	cgaagtgtga	aggggtgtta	gtggagggtta	gtgtgatgta	1740
ggtgttggtt	aggggggttaa	ggaaaaggaa	gggggtgggt	tgggttgaga	atgtttgtgg	1800
gggtttatgt	tttattagtt	ggtgtgttat	ttgagggtta	aggattgaaa	agagtattgg	1860
ggttgaggtg	ggtgggtaaa	gataaatagt	agggacgtag	tcggggtagg	atggggaggg	1920
cggatttggg	gttgtggggg	ttggtgcgga	gggagtttga	ttttgagtag	tcgttttttg	1980
gtaaaatttg	tgaggtagta	gcgcgtttga	gttttagggg	ttagtagtag	gttgtatagg	2040
gcgattttata	tttgttcgtt	taatttggtt	agtttttggt	gttttgaggg	ggttatagta	2100
tgtaaacggg	tgttttcgaa	ttgttgtagt	ttgtttgggg	agaggaatta	gtatattggg	2160
tgtagacgtt	gaattttttt	taagttaggt	agttgtgggg	gttgggagat	tgattattgt	2220
ttgggaatgg	gagaattttg	gttgtaggat	ttgttttaggt	tatagggttg	ttgatttttag	2280
agtaggggtga	gttttagtag	tggatatatg	ggtttggttt	gttgtagagt	ttagggttag	2340
gttaattttg	gttgaggtat	tttggtattt	ttagtgggtt	tggggatagg	gtttgttttc	2400
gtgtgtgtaa	gttgtttttt	tttattaaaa	agatattttg	aagtagtagt	ttgggggtta	2460
ggttggtggg	ggaggatttt	attttttttt	cgtcgggttt	a		2501

<210> 17  
<211> 2501  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 17

tggagtcggc	gggaaggagg	taggggtttt	ttttattagt	ttaagtttta	ggttattggt	60
ttaggggtatt	tttttgatag	aggggggtag	tttgtatata	cgaagataaa	ttttgttttt	120
aagttttattg	aggatattag	gatgttttag	tttaagggttg	tttagatttg	agttttgtag	180
taggttaggt	ttatgtgttt	attattgagg	tttattttgt	tttgggggta	gtagttttat	240
agtttgggta	agttttgtag	tttaggtttt	tttattttta	gtagtggtt	agttttttag	300
tttttatagt	tggtttattt	gaagagaatt	taacgtttgt	atattagtgtg	ttggtttttt	360
tttttaggta	agttgtagta	gttcgagggg	agtcgttggt	atattgtggt	tttttttagag	420
tagtaaaagt	tgagtaagtt	ggacgggtaa	gtgtggatcg	ttttgtataa	tttgttggtta	480
agttttgagg	tttaggcgcg	ttattgtttt	ataagttttg	ttaagggacg	gttattttaag	540
gttagatttt	tttcgtatta	gtttttatag	tttttagtata	gtttttttta	ttttatttcg	600
attgcgtttt	tgttgtttat	ttttgtttat	ttattttaat	tttagtggtt	tttttaggtt	660
ttgggtttta	ggtgatata	tagtttagtg	gatatgggtt	tttataggta	tttttaggtt	720
aatttagttt	tttttttttt	tttgggtttt	tgggttagtat	ttgtattata	ttgggtttta	780
ttggatattt	ttgtagtttc	gggttttttt	tatagatata	ttgttggtt	agttgtttta	840
tttgggttat	ttgtagagtt	ttttgggtta	tttgatttta	attgaaattt	agttttttta	900
gaaggatttg	gtgttggaat	aggtaggtat	tggaaagtta	gttggttagg	attattgttt	960
tattttatta	gtattttttt	gttatttttt	attttttttt	tttagatttt	agaaatttg	1020
gagcgggttg	agcgagaaaa	tagaggtaag	tggtaggtaa	ttgttaagta	ttagttttag	1080
tatgtgttta	gttttttaga	gtaggatttg	cgggtgtagg	cgcaaggta	aggtttggtg	1140
aaatggtagg	gaggggtggag	gggatgtagg	aggtatggat	gtgggtgggg	tgtttttatt	1200
ttttagggtt	agtttagattt	ttttgatttt	tttttaggtg	ggttgagatt	tatagggttg	1260
atgtgttaga	ggtagtgggt	tttagagcgg	ttcgttggtt	ttattgtagt	gtagagggtt	1320
ttaagcgttg	ttacgatgt	tagaatgagt	ggtattgttg	taggtgaggg	tatttttagaa	1380
ttttggattt	ttaagtttta	tttttatatt	tttttatatg	attgtttatt	ttaatattta	1440
tttgtttgta	gggagtgtta	agtttaagta	tgggaaaagt	atggaaagat	ttgtgttttg	1500
gtagtttagg	gtgatagagt	taaatgagg	ttgtagtgtt	tgagggtcga	ttatttatgt	1560
taagggaatt	tatttagaat	gtatttttga	attttaagat	tacggtttag	tttttgtcgg	1620
agtttttagtt	ttcgtagtgg	agagtagagc	gggcggtaaa	gttggttgatc	gatttttttt	1680
ttttttattt	taagtgaagg	ttcgagattt	tttgttttat	ttagtgggtta	ggttaagtgt	1740
gttggttttag	taaatcggat	taggagggtt	agggtcggat	gtggggattt	ttttttttta	1800
gtatagtaaa	gttggttttt	agaaatacgg	gtattttcgc	gtggtgtttt	gcggtcgtcg	1860
tcgttggttg	cgttcggggg	ggggtgtgag	gaggggacga	aggagggaag	gaagggttaag	1920
gcgggggggg	ttttgcgaga	gcgcgttttag	tttcgttttc	gggtttttata	gtttttgtat	1980
ttagggtttt	attgcgcggt	tttttttagt	tttttttcgt	cgtttagttt	ggatttttgg	2040
ggaggcgttg	aagtcggggg	tcgttttgtg	gtttcgttcg	gttcgcgttt	gttagcgttt	2100
aaagttagcg	aagtacgggt	ttaatcgggt	tatgtcgggg	gagtttgagt	ttattgagtt	2160
gcgggagttg	gtattcgttg	ggcgcgttg	gaagggtcgt	attcgggttg	agcgtgttaa	2220
cgcgttgctg	atcgcgcggg	gtatcgcgtg	taattttata	cggtagtttg	tttttggtcg	2280
tggttatcgt	tttttagttc	cgggggttcg	tacgtatacg	tgggtgcgatt	tttgtggcga	2340
ttttattttg	ggcgtcgtgc	gtaaagggtt	gtagtgcgcg	cgtgagtagt	ggtttcgcgc	2400
gtttacgaga	gcggaagggg	tagttaaggg	gtagcgtagt	cgtcgcgggt	taagtcgcgg	2460
tagagggggg	cggcggggat	agtttttcgag	gattaggttc	g		2501

<210> 18

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 18

agtataaaat	tgttttaagt	ttttgatttt	gtattttattt	taaagattag	tgtttggttg	60
aagttttggt	agtttttattt	ttattgaaat	aggtgtatat	ttaggtttta	agttaaatgg	120
atttgaaaaa	agtttttaagt	tttttttaat	gaatttgagg	tttttaaaat	gttttttaaa	180
tttttttttg	agacgataga	ttattatttg	atattttatta	ggattaaata	tttttttatt	240
ttttttattt	tgttgtttta	gtttattaat	aatttttttg	agggtaggaa	agtttggttag	300
attttttttt	ttaatatgtt	tttgaaataa	atttagttta	atttcgaaag	tataaatatg	360
gttaaaggta	gtagtagtaa	agattttatt	aattcgtaat	ttttttattga	gttttcgaag	420
gtgtttttata	atgttttatta	agaagttaaa	gttataaagt	tattgtttgt	ttgagaagtg	480
gattgtgtgt	gtttttattg	aaattaagaa	cgtttttatt	ttttttttta	gagagaatat	540

tagttttaaa	gttttttttt	ttttaagtta	attgttttaga	tatcgtttat	taattttttt	600
attatgtttt	gatttagatt	tcgttagtaa	agtttgaaat	ttaggtcgtt	taacgttttt	660
ggttttaatt	aaaattat	attcggatat	ggtatttatg	atttgattaa	tatttatatt	720
ataggagttt	aatagtttta	agtgaagaaa	ttttgaataa	tgaatgatat	tttaatagtt	780
ggggtttacg	gttttttttt	ttatgtatga	gacgagtttt	gagtttttat	taattatttt	840
taaagtatgg	gtcgtgggta	gtttaattat	tttttgtaag	ttaagttttg	ttgtttgtag	900
ggatttttagg	attgtcgata	tgagcgtatt	aatattgaaa	tgatgagtta	ggttgattat	960
ggttagaaga	tttttttgta	tttttaattt	agggtttata	tcgcggataa	agattaggag	1020
gtagttttta	taggttataa	aagtttggtc	gtttaaggta	agagaatagg	ttttaaaagt	1080
tttggttcgg	ttaaaaagt	ggttgcgtag	atttttggtt	atgttttagg	ttttttgttt	1140
tgtgatattt	ggagataagt	taacgttttg	taggacgttt	atatgttcgg	gtagtatttt	1200
tttttagta	atttttatgt	attggatat	aaagtttttt	ttatttttagt	cgcgattttt	1260
taaggttaag	aggcggtaga	gttcgaggtt	tgtacgagta	gttttttttt	taggagtgaa	1320
ggaggttacg	ggtaagtcgt	tttgacgtag	acgtttttatt	agggtcgcgc	gttcgtcgtt	1380
cgttatatat	cggtcgtagt	attcgtgttt	agtttcgtag	tggcgtttga	cgtcgcgttc	1440
gcgggtagtt	acgatgaggc	ggcgatagat	taggtatagg	gttttatcgt	ttttcggagg	1500
ttttattatt	aaataacgtt	gggtttattc	gggtcggaaa	attagagttt	cgtcgtattt	1560
tattttgttt	tttttgggcg	ttatttatat	tttgcgggag	gttataagag	taggggttaac	1620
gttagaaaagg	tcgtaagggg	agaggaggag	tttgagaagc	gttaagtatt	tttttcgttt	1680
tgcgttagat	tatttttagta	gaggtatata	agttcgtttt	cggatatttt	gtttttattg	1740
gttggtatatt	tcgtattttt	cgagttttta	aaaacgaatt	aataggaaga	gcggatagcg	1800
atttttaacg	cgtaagcgta	tattttttta	ggtagcgggt	agtagtcgtt	ttagggaggg	1860
acgaagagat	ttagtaattt	atagagttga	gaaatttgat	tggatattta	gttggtttaat	1920
taatagttgt	cgttgaaggg	tggggttgga	tggcgttaagt	tatagttgaa	ggaagaacgt	1980
gagtacgagg	tattgaggtg	attggttgaa	ggatattttcg	ttgagtattt	agacgttttt	2040
ttgggtttttt	tggcgttaaa	atgtcgttcg	tggtaggggt	tattcggcgg	ttggacgaga	2100
tagtggtgaa	tcgtatcgcg	gcgggggaag	ttatttagcg	gttagttaat	gttattaaag	2160
agatgattga	gaattgggtac	ggagggagtc	gagtcgggtt	tatttaaggg	ttacgattta	2220
acgggtcgcg	ttattttaatg	gcgcggatac	gtttttttgt	tcgggtagag	gtatgtatag	2280
cgtatgttta	taacggcgga	ggtcgtcggg	tttttttgacg	tgttagttag	gttttttttt	2340
ttttcgtaga	tcgtgtgttt	ttttatcgtt	ttttttcgag	attttttaag	ggttgttttg	2400
agtgttaagt	gaggaatata	cgtagtgttg	ttttaatggg	atcgttaatt	aagtaaggaa	2460
gttattttaat	ttaaaattat	gtatgtagaa	tatgcgaagt	t		2501

<210> 19

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 19

aatttcgtat	gtttttgtata	tataatttta	aattaagtgg	ttttttttatt	tagttaacgg	60
tattattaag	ataatattac	gtatattttt	ttattttatat	tttaaataat	ttttaaaagg	120
tttcggggga	gagcggtaaa	gaaatatacg	gtttgcggaa	aaggagaagg	tttgattggt	180
acgttaggga	attcggcggt	tttcgtcgtt	gtgggtatgc	gttgatatatg	tttttgttcg	240
ggtaaagagg	cgtgttcgcg	ttattgagtg	acgcggttcg	ttaagtcgta	gtttttaagt	300
gagttcgggt	cgattttttt	cgtattagtt	tttaattatt	tttttgatag	tattagttgg	360
tcgttgata	atttttttcg	tcgcgatgcg	gtttattatt	gtttcgttta	gtcgtcgaat	420
aatttttggt	acgaacgata	ttttggcggt	agaagagtta	aggaaacgtt	tagatgttta	480
acggaagtgt	tttttagtta	ttatttttagt	gtttcgtgtt	tacgtttttt	ttttagtgtt	540
agtttacgtt	atttagtttt	atttttttagc	ggtagttatt	gattggatag	tttgaatgtt	600
agttaaattt	tttaattttg	tgggttggtg	ggtttttttcg	tttttttttg	aagcggttat	660
tgttcgttat	ttagaaggat	atgcgtttgc	gcggttagaga	tcgttggttcg	ttttttttat	720
tgggtcgttt	ttaggagttc	ggggaatacg	aaatatttag	ttaataggag	tagagatgtc	780
ggaatcgggt	ttgtgtgttt	ttgttgaggt	gatttggtcg	agagcggagg	aggtgttttg	840
cgttttttag	gttttttttt	tttttttgcg	gtttttttta	cgttggtttt	gtttttgtgg	900
tttttcgtag	aatgtggatg	acgttttaaa	gaagtaagat	ggaagtcgac	gaggttttag	960
tttttcgggt	cgagtggatt	tagcgttatt	tgggtggtgga	gttttcggag	ggcgatgggg	1020
ttttgtgttt	ggtttgtcgt	cgttttatcg	tagttatttcg	cgaacgcgac	gttaggcgtt	1080
attacgaggt	tgagtacgaa	tattacgagc	ggtatgtggc	ggacggcgag	cgcgcggttt	1140

tggtggagcg	tttgcgttag	ggcgatttgt	tcgtgggttt	ttttattttt	gaagagagag	1200
ttgttcgtgt	aggtttcggg	ttttgtcgtt	ttttgggttt	gaagggtcgc	ggttgggggtg	1260
agggggattt	tgtatattag	tgtatggagg	tgttgttgag	agaggtattg	ttcgagtatg	1320
taagcgtttt	gtaaggcgtt	gatttatatt	tagatattat	aaggtagagg	atattgagta	1380
ttgataggaa	tttacgtaat	tagtttttta	atcgagttag	ggatttttaa	gtttattttt	1440
ttgttttgga	cgattagggt	tttgtgggtt	atgagaatta	ttttttgggt	tttatttcgcg	1500
gtgtagggtt	tgagttggag	gtgtaagaag	attttttgat	tataattaat	ttgatttatt	1560
attttagtgt	tggtgcgttt	atgtcggtaa	tttttagagt	ttttagagata	gtaggggtta	1620
gtttgtagag	aatgggttga	ttgattacga	tttatatttt	gaggatgatt	ggtgagaatt	1680
taggattcgt	tttatatatg	agagaaaagg	tcgtaagtgt	taattggttg	aatgttattt	1740
attatttagg	atttttttat	ttggaattgt	tgagttttta	tgatgtagat	gttaattaga	1800
ttataaatat	tatattcgaa	tggatagttt	tgattaagat	tagaggcgtt	aggcgatttg	1860
aatttttagat	tttattaacg	gaatttgaat	tagagtatgg	tgaaaggggt	aatggacgat	1920
gtttgaataa	ttgggttagg	agagggaaaa	ttttaaaatt	aatatttttt	ttaagaaaag	1980
aaatggaagc	gtttttgggt	ttagtagggg	taataatagt	ttatttttta	gataaataat	2040
ggttttgtga	ttttgggttt	ttggtggata	ttatggaata	ttttcgagaa	tttagtgaag	2100
aattacgagt	tagtaaagtt	tttgttggtg	ttgtttttga	ttatatttgt	attttcgaag	2160
ttaagttgaa	tttattttta	agatatattg	aggaaaaaaa	tttaatagat	ttttttgttt	2220
ttagagaagt	tgttgatgag	ttaaaatagt	aaaataagga	agatgaaaaa	atatttgatt	2280
ttgataggta	ttaaatgggt	atttgtcgtt	tttaaaaaga	atttgagaga	tattttaagg	2340
attttaggtt	tattaaaaag	gatttagaat	tttttttaaa	tttatttaat	tttaaatattg	2400
aatatgtatt	tatttttagtg	aggggtggagt	taataaaaatt	ttaggtaaat	attaattttt	2460
ggaatgaata	tagaattaaa	gatttggggt	agttttatgt	t		2501

<210> 20

<211> 3838

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 20

gtagtaggta	tttgttttaag	tttgatggaa	ggattttttt	agtttttttta	tatatattat	60
gtaaagtgat	cgttgttttt	gttttttttt	ggagattatt	tattttattt	ttttgagacg	120
gagtttcgtt	ttgtcgttta	ggttggagtg	tagtgctgta	atttcgattg	attgtaattt	180
ttgtttttcg	agtagttggg	attataggcg	cgcgttatta	cgttcggtta	atttttgtat	240
ttttagtaga	gacgggggtt	tattatgttg	gttaggttgg	tttcgaattt	ttgatagtaa	300
gtgatttatt	tatcgcggtt	ttttaaagtg	ttgaaattat	aggtatgagt	ttttatattc	360
gtttaggagt	ttattttatat	gggagtttgt	ttttaaagat	tattattttg	tgttagggtta	420
tttttttagat	ttgtttttat	attttttgta	aataggagga	agtgaatcgc	gttttttttt	480
atttattttt	tcggagggtt	tatgttttta	atattaattt	tagtatagtt	aaagaaaatt	540
attttatttt	attgagcgga	gttagaaaata	tgattaggtt	acgattataa	tttcgtgtgt	600
tttaggggtga	tcgagattgg	gtgattttat	gggtgtttta	cgtgtgggtt	ttgattgatt	660
atattatggg	tttttttagtt	aaaaatttaa	agtagtggat	aaagtatttg	cgatttaaaa	720
taagtaatgg	aatgaatagg	aaggcgaaat	tagagtttta	agcggtagga	taaataggaa	780
aaaggaagag	tgaggtagga	agggtttaaa	tgtaggtttt	tcggaggata	agtcgtcgtt	840
atatttttgt	ttgtcgtttc	gttagtcgtt	tttacgcggc	gcgggaaaac	ggtcggtttc	900
gttttggtgt	taggtttttt	tcgttcgtta	ggtagtgggg	tttttttttg	ttttttttga	960
gacggagttt	cgtttagtcg	tttaggttgg	agtgtagtgg	cgtgatttcg	gtttattgta	1020
atttttattt	ttcgggttta	agcgattttt	ttgttttagt	ttttcgagta	gttgagatta	1080
taggtacgcg	ttattacggt	tagttaattt	ttgtattttt	agtagagacg	ggttttttatt	1140
atgttggtta	ggatggtttc	gatgttttaa	cgtcgtgatt	cggtcgtttc	ggttttttta	1200
gtgttggtat	tataggcggt	agttattgcg	ttcgggttta	gttaggtagt	tttaatcgag	1260
cgttttataat	tattgagacg	tagtgaagta	tttattataa	aatttttagga	ggtcgcgtcg	1320
cggttttagat	tttttttttt	ttttaatttt	cgtttaaggg	attcgttttt	atttttttatt	1380
ttagttattt	taatttttta	tttttttttt	ttggacggcg	tcggggaaaa	taagttgttc	1440
gagttttatt	ttttcggtgt	aattaattta	gaatgaattt	tttcgttttt	gcgtgttttag	1500
tgagtcggta	tttttagtagt	gaattgtatt	taaaaattta	ggaattgagc	gaattttttt	1560
agtggttttt	tttatcggga	ttttttttta	cgtttttttt	tcgtgtcgcg	tttttagttcg	1620
tattgtttat	tggtcgcgtg	ttttgttaat	tcgatgtacg	tcggttaggg	taaagatcgc	1680
gaaaaagcgc	gtatatttgg	ttttggggagc	gcgcgtttta	cgttagtttag	tagtaggagg	1740

cgcgcgaggt	attacgggtt	ggcggtcgag	agttaggag	gaattttatt	tatataacgg	1800
tcgttttttt	gttttttggc	gggggtcgga	gtttcgtttt	tcgtttaatt	tgaaatttgt	1860
tgggttacgg	gttagttatt	tcgatttagg	taagtttgtg	gtggagttgg	aagagtttgt	1920
gagggcgggt	tcgggagcgg	attgggtttg	ggagttttta	gaggcgggta	taagaatcgg	1980
gaattgggcg	cggggagttg	agttgttggg	agtgttcgtg	gtgtttgggt	cgaggtgggc	2040
gttagttgat	ttcgcggagt	ttattttttt	ggttttttcg	ttttaacgtc	gttcgttttt	2100
tagttaggat	gtttgttcgt	ggttcgggta	tcggtatcga	tttgggtatt	atttattcgt	2160
gcgtcggggg	tttttaatat	ggtaagggtg	agattatcgt	taacgattag	ggtaatcgta	2220
ttatttttag	ttacgtgggt	tttacggata	tcgagcgttt	tatcggcgac	gtcgttaaga	2280
attaggtggg	tatgaatttt	attaatatta	ttttcgacgt	taagaggttg	attggacgga	2340
aattcgagga	tggttatagt	tagtcggata	tgaaatattg	gtcgtttcgg	gtggtgagcg	2400
aggaggttaa	gttttaaagt	taagtagagt	ataaggggga	gatttaagatt	tttttttttag	2460
aggagatatt	ttttatgggt	tttacgaaga	tgaaggagat	cgcggaagtt	tatttggggg	2520
gtaaggtgta	tagcgcggtt	ataacgggtt	cggtttattt	taacgattcg	tagcgttagg	2580
ttattaagga	cgtaggtatt	attacggggg	ttaatgtgtt	gcgtattatt	aacgagttta	2640
cgcgcgcggt	tatcgtttac	ggtttgata	agaagggttg	cgcgggcggc	gagaagaacg	2700
tgtttatttt	tgatttgggc	ggtgggtatt	tcgacgtgtt	tattttgatt	atcgaggatg	2760
gtattttcga	ggtgaagt	acggtcggcg	atattttatt	ggcggtgag	gatttcgata	2820
atcgtatggt	gagttatttg	gcggaggagt	ttaagcgtaa	gtataagaag	gatattgggt	2880
ttaataagcg	cgtcgtgagg	cggttgcgta	tcgtttgcga	gcgcgttaag	cgtattttga	2940
gttcgtttac	gtaggcgagt	atcgagatcg	attcgtttta	cgagggcggtg	gatttttata	3000
cgttttattac	gcgcgttcgt	ttcgaggagt	ttaatgtcga	tttttttcgc	gggatttttg	3060
agtcggtgga	gaaggcgttg	cgcgacgtta	agttggataa	gggttagatt	taggagatcg	3120
tgttggtggg	cggttttatt	cgtattttta	agatttagaa	gttggtgtag	gattttttta	3180
acggtaagga	gttgaataag	agtatttaatt	tcgacgaggc	ggtgggttat	ggcgtcgcgg	3240
tgtaggcggg	tattttttatc	ggcgataaat	tagagaatgt	gtaggatttg	ttgttattcg	3300
acgtgatttc	gttgtcgttg	ggtatcgaga	tagttggcgg	tgttatgatt	ttatttatta	3360
agaggaatat	tacgattttt	attaagtaga	cgtagatttt	tattatttat	tcggataatt	3420
agagtagcgt	attggtgtag	gtatacgagg	gcgaacgggt	tatgattaag	gataataatt	3480
tgttgggtaa	gttcgatttg	atcgggattt	tttttgcgtt	tcgcgggggtt	ttttaaatcg	3540
aggttatttt	cgatatggac	gttaattggt	tttttaacgt	tatcgtcgtc	gataagagta	3600
tcggtaagga	aaataaaaatt	attattatta	atgataaagg	tcgtttgagt	aaggacgata	3660
ttgatcggat	ggtgtaggag	gcggagcggt	ataaatcgga	agatgaggcg	aatcgcgatc	3720
gagtcgcggg	taaaaacgtt	ttggagtttt	atattttata	tattaagtag	acggtggaag	3780
acgagaaaatt	gaggggtaag	attagcgagt	aggataaaaa	taagattttc	gataagtg	3838

<210> 21

<211> 3838

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 21

tatttgcga	ggattttgtt	tttgttttgt	tcgttaattt	tgtttttttag	tttttcgttt	60
tttatcgttt	gtttgatgtt	gtaggtatag	gatttttaggg	cgtttttggg	cgcgattcgg	120
tcgcgattcg	ttttattttt	cgatttgtat	cgtttcgttt	tttgtattat	tcggttaatg	180
tcgtttttgt	ttagacgatt	tttgttattg	gtgatgggta	ttttgttttt	tttatcgggtg	240
tttttgcgg	cggcggtaac	gttaaggatg	ttattggcgt	taatgtcgaa	ggtaatttcg	300
atttggggga	tttcgcgagg	cgtaggggga	atttcgggta	ggtcgaattt	gttttagtagg	360
ttattgtttt	tggttatggg	tcgttcgttt	tcgtatatatt	gtatttagtac	gttgtttttg	420
ttgttcgagt	aggtgggtgaa	ggtttgcgtt	tgtttgggtg	ggatcgtggg	gttttttttg	480
atgagtgggg	ttatgatatc	gttagttgtt	tcgatgttta	gcgataacgg	ggttacgtcg	540
agtagtagta	ggttttgtat	attttttgat	ttgtcgtcga	tgaggatggg	cgtttgtatc	600
gcggcggttat	aggttatcgt	ttcgtcgggg	ttgatgtttt	tgtttagttt	tttgcgtttg	660
aagaaatttt	gtagtagttt	ttggattttg	gggatacgag	tgtagtcgtt	tatttagtacg	720
atttttttga	tttgggtttt	gttttagttt	gcgtcgcgta	gcgttttttt	tatcgggtttt	780
agggttttcg	gaaagaggtc	ggtattgagt	ttttcgaagc	gggcgcgcgt	gatggacgta	840
tagaagttta	cgtttttcgta	gagcgagtcg	atttcgatgt	tcgtttgcgt	ggacgagttt	900
agggtgcgtt	tggcgcgttc	gtaagcgggt	cgtagtcgtt	ttacggcgcg	tttgtttggg	960
ttaatgtttt	ttttgtgttt	gcgtttgaat	tttttcgtta	ggtgggttat	tatgcgggtg	1020

tcgaagtttt	tatcgtttag	gtgggtgtcg	tcggctcgtg	attttatttc	gaagatgtta	1080
ttttcgaatg	ttaggatgga	tacgtcgaaa	gtgttatcgt	ttagggttaa	gatgagtacg	1140
tttttttcgt	cgttcgcgta	gttttttttg	tttaggtcgt	aggcgatggt	cgctcgtcgtg	1200
ggttcgttga	tgatgcgtag	tatattgagt	ttcgtgatgg	tgtttgctgt	tttggtgggtt	1260
tggcgttgcg	agtcgttgaa	ataggtcggg	atcgttatga	tcgcgttggt	tattttgttt	1320
tttaggtagg	ttttcgcgat	tttttttatt	ttcgtgagga	ttatggagga	tatttttttt	1380
gggaagaagg	ttttgggttt	ttttttgtat	tttatttgta	ttttgggttt	gtttttttcg	1440
tttattattc	ggaacgggta	gtgttttata	ttcgtattga	ttgtggtatt	ttcgaatttt	1500
cgtttaatta	gttttttggt	gtcgaagatg	gtgttggtgg	ggtttatggt	tatttggttt	1560
ttggcggcgt	cgctgatgag	gcgttcggtg	ttcgtgaagg	ttacgtagtt	gggggtggtg	1620
cgattgtttt	ggctcgttgg	gatgattttt	attttggtat	gttggaagat	ttcgacgtac	1680
gaataggtgg	tgtttaggtc	gatgtcgata	gtcgggttac	gggtagatat	tttgattgaa	1740
aggcgagcga	cgttaggacg	ggaaaattag	ggagatgaat	ttcgcggagt	taattaaacgg	1800
ttatttcgaa	ttaagtatta	cgggtattat	tagtaattta	gtttttcgcg	tttaggtttc	1860
ggttttttata	gtcgtttttg	ggaattttta	gatttaattc	gttttcggga	tcgtttttat	1920
aaattttttt	agttttatta	taggtttggt	taggtcggag	tgattggttc	gtgatttaat	1980
agattttaag	ttggacgagg	ggcgggattt	cggttttcgt	taggagatag	aggggcggtc	2040
gttatgtaaa	tgagggtttt	ttttgatttt	cggtcgttag	gtcgtggtgt	ttcgcgcgtt	2100
ttttgttggt	ggttggcgtt	aggcgcgcgt	ttttagagtt	aggtgtacgc	gttttttcgc	2160
ggtttttggt	ttagtcgacg	tgtatcggat	tggtagggtg	cgcgggtta	gagtagtgcg	2220
gattgaggcg	cggtagcggg	aggaggcgtg	gaaggggatt	tcggtgagga	gagttattgg	2280
gagagttcgt	ttaatttttg	aggtttttaa	tgtagtttat	tgtaggggtg	tcgatttatt	2340
gagtacgtag	gggcggagga	atttattttg	agttgggtgt	atcgaagaaa	taaagttcga	2400
gtagtttggt	tttttcggcg	tcgtttaagg	ggaggggaata	gggaattggg	gtgggtgggg	2460
tgggggggtga	gggcggattt	tttggaacggg	gattaaagaa	aagaaaaagt	ttgaatcggc	2520
ggtcggtttt	ttgggatttt	atgggtgggtg	ttttatttgc	tttagtggtg	tgtagcgcgtt	2580
cgattaaaaa	tgtttgggtg	gggtcgggcg	tagtggttaa	cgtttgta	tttagtattt	2640
gggagggtcga	ggcgggtcga	ttacgacggt	aagatattcga	gattattttg	gttaatatgg	2700
tgaaagttcg	tttttattaa	agatataaaa	attagttggg	cgtggtggcg	cgtgtttgta	2760
gttttagtta	ttcgggaggt	tgaggtagga	gaatcgtttg	aattcgggag	gtggagggtg	2820
tagtgagtcg	agattacgtt	attatatttt	agtttgggcg	attgagcgag	atttcgtttt	2880
aaaaaaaaata	aaaaaaaaatt	ttattgtttg	gcgggcggag	agaatttgag	tttagggcga	2940
ggtcgatcgt	tttttcgcgt	cgcgtgaggg	cggttggcgg	gacggtagat	aggggtgtgg	3000
cggcgattttg	tttttcgagg	agtttggtatt	taaatttttt	ttgttttatt	tttttttttt	3060
tttggttggt	ttgtcgtttt	aaattttggt	ttcgtttttt	tggtttattt	attgtttatt	3120
ttaggtcgta	agtgttttat	ttattgtttt	gagtttttga	ttggaaaatt	tataatataa	3180
ttagttaaaa	tttatacgtt	gaaatattat	aaagtatttt	agtttcgggt	attttggtat	3240
atacgggggt	gtgatcgtga	tttagttatg	tttttgattt	cgtttaatgg	aatggaatga	3300
tttttttttg	ttgtgttgag	gttaatatgt	gaggtataaa	tttttcgaga	aggtagatga	3360
aaaggagcgc	gatttatttt	tttttgttta	ataggaaatg	gaggataggt	ttggaaaata	3420
ttttggtatt	aggttaataa	tttttagaag	aggtttttat	ataaatgggt	ttttggacgg	3480
gtgtggagggt	ttatgtttgt	agtttttagta	ttttgaaagg	tcgcggtagg	tggattattt	3540
gttggttagaa	gttcgagggt	agtttggtta	atatggtgaa	atttcgtttt	tattaaaaat	3600
ataaaaaata	gtcgggcgtg	gtggcgcgcg	tttgtagttt	tagttattcg	agaggtagag	3660
gttgtagtta	gtcgagattg	cgatattgta	ttttagtttg	ggcgatagaa	cgagatttcg	3720
ttttaaaaaa	ataaaaataa	tggtttttag	gaggaagtaa	agatagcgat	tattttatat	3780
aatatgtgtg	gggagggttg	ggaagttttt	ttattaagtt	tgaataggta	tttattat	3838

<210> 22

<211> 2893

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 22

ttttggtttt	agatatagtt	aagttgttat	aataattagg	gggatttaga	gggagtatta	60
ggagggggag	gattttttta	agaggtgaga	aggggtttgc	ggtttcgttt	ttagtcgagg	120
gcgggaggcg	tttcgttttt	atattttatt	gtttttttta	attttaggtc	gggagggtat	180
ttatatggtt	ttaggtaagt	aataataaaa	taatacggta	ttttagttaa	tggtgcgtgt	240
acggcggggc	ttgtcgggta	aattttgga	gggaaggagt	ttaggtagtc	gcggaggacg	300

gggttgaggg	ggatgacgagt	taggttttcg	cggtttacgg	tggttacgat	gcgttggcgg	360
tatagttttt	gtagcggtcg	tacgcggcgt	tggcgtacgc	gggttttttag	tatgcggcgc	420
ggcgtcgtaa	cgtagtgttt	tagtagttcg	aagaggtagt	cgaagttttc	gcggttgtaa	480
tttaggtgaa	agcggtcggt	ttgaaagtgt	acgcggatgt	tcgtgggttt	cgaggttatt	540
tttacgttaa	gggcgaaaaa	gtagtttcgt	tggcggttgt	cgcgatttag	gaaggtgttt	600
acgggttcgg	cgcgtagtcg	ttcgtgcgtt	tcgtgtacgt	ttaggggttt	ttagtagaat	660
tcgtaggcgt	ttaggagcgc	gttggcgcg	gtgatgcgtc	ggtaatcggc	gtgcgaacgg	720
aatgtgcgga	agtgcgtgtc	gtcgggggtc	ggggtcggga	tcgcggggta	cggtcgcggg	780
cgcgcggggg	tcgcggggcga	ggaggaggaa	gaggaggaa	gttttggtcg	tcgtcggggt	840
tttggtgttg	tggagattgt	attgtcgggt	gttattttgt	tgtgtgttat	tattttatag	900
aaggggttag	tcggaggggt	gggttatagc	gttcgggggt	gcgttgcggg	agagataaag	960
aggtgagttg	gggcgttgcg	gggtcgggta	ggtgtgcgtc	ggtcggataa	tttcggaggg	1020
cggcgttttc	ggcggattcg	gttttagggg	gcgagtagcg	agtattaa	tcgcgcggat	1080
tcgttttagtt	ttagtggata	tagttagaaa	atgggttttg	tatttcgcgg	agtttttttc	1140
ggcgggtggg	ggttcggtgg	aggcggagtt	cggtttttcg	gtagtatcga	gagggggggc	1200
tggagagtag	tcggtttttg	ttttagtcgt	tcggttttcg	ttcgtcgttt	cgcgttcgtc	1260
gtttgttgg	taggttggga	ttcgcgtttg	gtttgggcga	tttgggttag	ggtcggagaa	1320
aggttgtgtt	gcgggagttt	cgcgcgcggg	gggcgggttg	gggtgggtcg	gcgaggggta	1380
gggggtatcgc	ggtcgcgatt	ttattttgt	gttttcgagg	ttcgttcgat	ttttggttgt	1440
tttggttttt	tttttttttt	ttttttcgtt	ttttcgttta	gggttcgggt	tatttgccgg	1500
cggggcgcg	gacgtcgcgg	gcgggacggc	gggggggttc	ggggcggttc	ggggcggttt	1560
tcgcgtatgt	ttcgggggta	ggagtcgttc	agttgttacg	gtcgtagttc	gttttggttc	1620
gcgttcgttt	ttcgtttagt	tttttaaatt	gggttcggag	cgggggtggc	gacggcgga	1680
gggttcgttt	ttgtcgggtt	tcgttttttag	ttttattttt	gggttttttt	ttcgcgggtg	1740
cggttcggcga	ggatcggttc	gggtttgttt	tttttttttt	tggatttttt	cgcggggttt	1800
tttggttcgtt	tggttcgtatt	tggttttagta	ttcgtttttc	gaggggtttt	gggttcgatt	1860
ttgcgttttt	cgtttatttt	tcggattttt	ttttcggatt	tggcgatttc	gattttgttt	1920
cgttattttcg	ggtttttatt	tttgtcgtta	ggtttttttg	ggacgcgttt	tgatataatt	1980
tttttcgttt	tagttgtttt	tatatcgtc	gggggttagag	ttttgttttt	tttttttttg	2040
tagttagatt	tttttaggag	gttatagaag	gtgtttttta	ttttgagttt	gattttattc	2100
gtagattttt	tttttagttt	tggtttattc	gtcgtcgacg	tttttagtcg	ttcgttttgt	2160
tggttcgaag	tttcggtcgg	tcgcgggttt	tgggttttgt	tcgggttttt	cgggaagcgg	2220
cggtttgatt	ataggtttta	gaggaatttt	tggcggcgcg	ggcgttttta	tttcgggtta	2280
gttttttcgga	aattgggcgg	ggtcgggtaa	gggtttttgt	gggttcgatt	gttttttttg	2340
cgttttttatt	attcggttgc	ggaagaaatt	gaggttgggg	aggggttggg	atttgtaatt	2400
gtttgtagat	tgggagtttt	ggatttggt	ttcgtttttt	tcgtttttat	tttggggaga	2460
ggtgtagttg	gacgatatta	aattggagtt	tagtgaaaaa	atggtgtatt	tttagacgtg	2520
atgaattttt	aaatttggtt	tttttagttt	tttttttttc	gatttttttt	ttatagattt	2580
ttttttttta	ttgttttcgtt	aggattttgt	tttttaaaga	ttgttttttt	attatatata	2640
cggtcggggg	ttgggatggg	gggcggtcgg	tggtcggggg	tgtaatttgt	atacgtgttt	2700
gtgatttagt	gatttcgatt	gtcgtgcgag	gttatggagt	aggtgtttgg	ttgtttcgtg	2760
tatttttgaa	tgaaggtatg	tgaggagttt	tagtattata	aggggttata	taaaaatttg	2820
gttaggttg	gtatttggtt	attgggttta	tattgggata	tattgttttt	tatagatagt	2880
tttttagacg	ttt					2893

<210> 23

<211> 2893

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 23

aagtcgtttg	agagttgttt	gtagagggta	gtgtgtttta	gtgtgaggtt	agtaattaag	60
tgtttagttt	agttaggttt	ttatgtggtt	ttttgtgatg	ttgggggttt	ttatatgttt	120
ttatttaaaa	atatacggag	tagttaggta	tttattttat	ggtttcgtac	gataatcggg	180
attattaaat	tataaatac	tgtgtaaatt	atagtttcga	ttatcgatcg	tttattattt	240
taagtttcgg	tcgtgtgtgt	ggtgggaagg	tagtttttga	agggtagatg	tttgacggag	300
tagtaggagg	gggaaattta	tgaggaaagg	gtcgggggag	aggagggtta	ggaaattagg	360
tttggggatt	tattacgttt	gagaatgtat	tattttttta	ttgggtttta	atttgatgtc	420
gtttagttgt	attttttttt	aaaatgaaga	cggggaaggc	gagatttagg	tttagagttt	480



ttaatttgta	agttattgta	aatttttagtt	tttttttagt	tttagttttt	ttcgtagtcg	540
ggtagtgga	gcgtagggag	ggtagtcgag	gttattagg	attttggtcg	gtttcgttta	600
gttttcgagg	aattgggtcg	gggtggaggc	gttcgcgtcg	ttaggggttt	ttttgaagtt	660
tgtggttagg	tcgtcggttt	tcgggaagtt	cgagtttaaga	ttagagatcg	cggtcggtcg	720
gggtttcggg	atagtagggc	gggcgattga	gggcgtcgac	ggcgggtgga	gtaggggtta	780
ggaggggggt	tacgggtggg	gttaggttta	gggttgggga	tattttttgt	ggtttttttag	840
ggggattttg	ttgtagggga	ggagaggata	gggtttttgt	ttcggcgggt	gtggagatag	900
ttggggcgga	ggaggggtgt	ttagggcgcg	ttttaagagg	gtttggcggg	agaaagtgga	960
attcgaggta	gcggggtaaa	atcggggtcg	ttaagttcga	aggaggggtt	cgagaagtgg	1020
tcggaaggcg	taggggtcgg	gttagagttt	ttcgagaggc	gggtgttggg	gtaggtgcga	1080
ataggcgggt	agaggggttc	gcgggagggt	ttagaagaga	gggaaatagg	gtcgaagcgg	1140
ttttcgctcg	acgttatcgc	ggaaagagaa	attaaaagtg	gagttggggg	cggggtcggt	1200
agggggcggg	gtttttcgtc	gtcgttagtt	tcgttttcga	gtcggtttaa	aagattggcg	1260
taggggcggg	cgtcgaatag	agcgagttgc	ggcgttggtg	gttgtagcgt	ttttgggttc	1320
ggagtatgcg	cgagagtcgt	ttcggagcgt	ttcggagttt	ttcgtcggtt	cgttcgcggc	1380
gtttcgcggt	tcgtcggttag	gtgagtcggg	ttttgggcga	ggaggcggga	gggaggagg	1440
aggggagttt	agggtagtta	ggagtcgggc	gagtttcggg	ggttgtagaa	tggggtcgcg	1500
gtcgcgatgt	ttttgatttt	cgtcgggttt	atttaggtcg	tttttcgcgc	gcgggggttt	1560
cgtagtatag	ttttttttcg	gttttagttt	aaatcgttta	gattaggcgc	ggatttttagt	1620
ttggttagta	ggcggcgggc	gcggggcggc	gagtcggggt	cggacgggtg	gagttagaat	1680
cggttgtttt	ttacgttttt	ttttcggtgt	tggttcggagg	tcggatttcg	tttttatcga	1740
gtttttattc	gtcgggaaga	gtttcgcgga	gtatagagtt	tatttttttag	ttgtgtttat	1800
tgaggttgaa	cggatttcgc	cggatttggt	gtttcgtgtt	cgttttttag	ggtcgggttc	1860
gtcgggagcg	tcgttttttc	gagttgttcg	gtcggcgtat	atttgttcgg	tttcgtagcg	1920
tttttagttta	ttttttttgt	tttttcgtag	cgtatttttc	gacgttatgg	tttatttttt	1980
cggtttggtt	tttttgtagg	atggtagtat	ataattaggt	ggtagtcgat	aatgtagttt	2040
ttatagtagt	agagtttcga	cggcgggttag	aatttttttt	tttttttttt	ttttcgttcg	2100
cggtttttcg	gcgttcgcgc	tcgtgttttc	cggtttcggg	ttcggttttc	ggcgatacgt	2160
attttcgtat	atttcgttcg	tacgtcgatt	atcggcgtat	tacgcgcgtt	agcgcgtttt	2220
tggacgtttg	cggattttat	tgggggtttt	tgagcgtgta	cggggcgtag	gagcgggttc	2280
gcgtcgagtt	cgtgggtatt	tttttggtgc	gcgatagtcg	ttagcggaat	tgtttttttc	2340
tttttagcgt	gaagatgggt	tcgggattta	cgagtattcg	cgtgtatttt	taggtcggtc	2400
gtttttattt	ggatggtagt	cgcgagagtt	tcgattgttt	tttcgagttg	ttggagtatt	2460
acgtggcggc	gtcgcgtcgt	atggtggggg	tttcggttcg	ttagcgtcgc	gtgcggtcgt	2520
tgtaggagtt	gtgtcgttag	cgtatcgtgg	ttatcgtggg	tcgcgagaat	ttggttcgta	2580
ttttttttaa	tttcgttttt	cgcgattatt	tgagtttttt	tttttttttag	atttgatcgg	2640
tagcgttcgt	cgtgtacgta	gtattaattg	ggatgtcgtg	ttatttttgt	attatttgtt	2700
tggaaattatg	tgggtatttt	tttcggtttg	ggttggagg	agcggatggg	tgtaggggcg	2760
aggcgttttt	cgttttcggg	tggagacgag	gtcgtagatt	tttttttatt	ttttgagggg	2820
gttttttttt	ttttggtgtt	ttttttgggt	ttttttgggt	gttgtagtag	tttaattgta	2880
tttgaggtta	gga					2893

<210> 24

<211> 5898

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 24

ataatagttt	tgtaaggtag	ggattatgat	tattttttaga	agaggttaaa	taaattgtta	60
aagattatat	atgtagtaag	tggtggtaga	gtgaggattt	atatttggtg	agtttaattt	120
taaagttatg	gtgttaaatg	atatttttat	ttattttatt	atatttttat	ttattttatt	180
atttaatgat	tatattggat	gtttattata	tgtttaagaat	tatgtttaag	gtgttggaatt	240
atagttgtga	ataatgtaag	tataaatata	tgaagtagag	ttggggagaa	agtaagttgg	300
agaaataaga	tataaattag	gttagatggg	gaatatgatt	aaggaaaaaa	ttagagtagg	360
gaggaaagag	aaatgtgtag	ggggaagggt	aatttttgagt	gagttaatag	gtaaggtttt	420
attaagaaag	cggtattaaa	taaagatttg	aggaaagtga	ggagtaaatt	ttgtagttat	480
ttaaaaggag	agtatgagag	gtagaggaga	tagtaaatat	aaagattttg	aagtaggggt	540
aaggttaatg	agtttttagaa	ttagtaagga	gttttagtgta	atttgaatag	agtgaattaa	600
gaatagagta	ggaggaaatg	aggttagaga	ggtaaatagg	ttggagtgtg	gtgggtatcgt	660



ttcggtttat	tgtaattttt	atttttcggg	tttaagcgat	ttttttgttt	tagttttttt	720
agtagttggg	attataggta	tgtattatta	tattcgggta	atttttgtat	ttttagtaaa	780
gacggtgttt	tattatgttg	gtaggttg	ttttgaattt	ttgattttaa	gtgatttatt	840
cgttttaatt	ttttaaagt	ttgggattat	aggcgtgagt	tatcgcgttc	ggtaggatt	900
tttttaatta	agtatgatgt	agttattagg	gttgaggtat	tttaggaaga	gggaatagta	960
tgtattaagg	taataggaaa	gtatataaaa	aaggagttgt	tggaagattt	attttaattt	1020
attattaagt	aaatattaaa	tttattgtat	aaaaatgtta	gggttaggag	gggtgggtta	1080
cgtttgtaaa	ttcgggtattt	tgagaggtcg	aggtaggagg	atcggttgaa	tttaggagtt	1140
cgagattagt	ttgattaata	gggcgaaatt	tcgtttttat	taaaaatata	aaaattagtc	1200
gggcgtggtg	gtgggcgttt	gtaatttttag	tttttcggga	ggttgaggta	ggagaattgt	1260
ttgaatttgg	gaggcggagg	ttgtagttag	ttgagattac	gtttttgtatt	ttagtttggg	1320
cgatagaggg	agatttggtt	atgttttttt	ttcgtttttt	gttagtttta	ggaataaata	1380
tttttttatt	taagttaaa	tgtgggtata	tttttttttt	aggatttttt	attaaggaat	1440
aagaagtatt	attaggataa	tttagagggt	agtttaatttt	agtagatata	gtgggttttta	1500
aaaggtttgg	ggtttttagat	tgtatatagg	ttttatatgg	aatttgattt	gtttttttat	1560
tttagttttt	tatttagaat	tcgaatttag	ttttttatgt	tataaaaagg	gttagagggt	1620
taaagagggg	aagtgttttg	tgtaaaaatta	tttaattatt	ttgtagagga	ttttaattag	1680
ggtttagtta	gttttcgttta	tattataaaa	ggtttttttt	aaaaaacgaa	atatgattaa	1740
gggtatacgg	tttttagcgtt	aataaagttt	tttggttagtt	gggaaatggt	tttttttttcg	1800
atltattttgt	ttattattttg	tatagaatta	tgtattttaa	agtaggaaaa	ttattgagaa	1860
aattattggg	tttcggttgt	agatttttaag	gttgggagtt	ggtttttcgtt	tttttttaga	1920
gtcggtaggg	ggggtaggtg	gtaaaagtgt	taagacgcgt	ttttttttta	tttttttttt	1980
tttttcgttt	aattttttat	agtcgcggtt	tttaataaaa	gtgggttattg	atltttttaag	2040
ttttcgagta	gtgatgtaat	agaatagtat	tttaaaagaaa	aatgtttatc	gaaatttttg	2100
atltcggtttt	ttcgtgattg	tttaagggttt	tttttaaaaa	gtaggttata	ttttaagtag	2160
gttatattttc	gggggcgggt	gcgtagataa	ggagatgagt	ttttattaa	gttagggggt	2220
ttttaacggg	gttgtaggtg	agaatttttag	gtagggtaga	ggtgtcgaga	ttttttcgaa	2280
tttttagtttt	ggggcggttag	ttttgtaggg	aatggttagag	atattttttcg	gattgaggga	2340
atcagaggta	gttattaagt	tttttttcggg	cgcgtaggta	agggcggttt	tttagtagtc	2400
ggcgtaggtg	attcgggcgg	gtcgtcggtg	ttatcggaga	cgttgagta	gagggaggga	2460
ggaagggagg	agtcgggtgg	gtcggggtga	taaggagtcg	gagcgttagg	gggaggggat	2520
taaggacggg	cgccgctcgtt	taaggaggcg	ttgttttttc	gttcgttgtt	tttttaggatt	2580
tgattaaggg	gatcgttttc	ggtttttcggt	cgtgggtatc	gggacgagta	cgccgctttt	2640
acgttatcga	tgtgttttag	agtcggagag	tttggttttc	gaggatttat	agtcgttttt	2700
gtacgtttat	ttttcgtaaa	agtcgggtta	ggagggtcgt	atcagggggg	cgtcgtcggg	2760
atgttttagag	gaattttattt	tcgtggtagg	tttaagggtta	aggatcgtta	tttttttttg	2820
aattcggggc	tttagttggg	tcgggtaggg	ggtaggtttc	ggtcgtcgaa	acgggggttg	2880
ttgtagtcgg	tggtcgggga	gatttttagt	ttcgtttcga	gtatttcggg	gtgtgggttg	2940
agaggtaggt	cgatttcggc	gtgtatatcg	ttcgttttgt	atltcgagcgt	ttttattcgg	3000
ttttttttga	agtttgtgta	ttgcgatcga	gtttttttta	agtagtagcg	gggttcgcgg	3060
ttacgtgagg	tcgatttttg	gaaagttttt	ggaaagtcgt	tttcgtagta	gtcgggcggg	3120
gcgcgagcgg	agcgttgatt	ggggaggagg	gcggggagta	agggaggcgc	gtcgggttg	3180
gaagtcgcgc	gtattcgttg	tttttgggat	cgacgtttta	tttttgttaa	gtttcgtcgt	3240
agtcgtcgcg	gttggcgggt	tttggttttt	ttttgaagta	tgagtttttt	cgttcgtagt	3300
tattttttatc	gcgtggttcg	cggatagtgc	gcgtcggggg	ttcgggtgta	tagtttttagg	3360
atatttcgtg	ttcgtagttc	gggcgttcgc	ggtaggtatc	ggtagtgggg	gaagtgcgaa	3420
ggtttcgttt	cgaggagagt	tatcggggag	ggcggcgagg	cgcggtcgcg	gtcgtcgggg	3480
agcggcggac	ggtttgggtt	ttcgtagttc	ggagcgtcgg	ggaagagaga	gttcgaatcg	3540
cgtttttgtt	tcgcggttta	gcgttgttgt	ttgttttttt	tagttttttt	tcggcgtttg	3600
gaagtgtttg	gagttttttt	tttttatttt	ttttaaattg	ttatttaaat	taataatttt	3660
tttaataatt	tgattttttcg	ttttttttta	tcggttttgt	tttcgttttc	gttttttttt	3720
tttttttttt	tttttttttt	tttattttta	gggtcgtagt	cggagggaaa	ttcggtagta	3780
gttcgagagt	ggaggtgttt	tagttcgtag	ggggcgtcgt	cgcgcggtgg	gggatggggg	3840
cgaggtaatg	atlttcgagg	tttttgtgtg	ttttttgcgt	acggaatttc	gatcgtcgtt	3900
ttcagagcgc	gggttggttg	tatttttcggg	tatttcgttt	ttaaattaaa	cgttaacggg	3960
ggaataaagg	gtagacgttt	tttttttttc	gggttttttt	tatttttttt	ttttttttta	4020
ttttttcgtt	ttatgttcgt	tgaggaggtt	gttttggtgcg	gaggcggcgg	cggcgggtcgc	4080
ggtcagagtc	gaggtaagag	cgcggcgttg	gtgggtttgta	tttttcgtag	cgttcgcgat	4140
cgttcgttcg	gttttcggtt	cgtttcggag	tttcgcgagg	gttcgcggtt	cgggtcgatt	4200
tttcgatagc	gttcgcggcg	gcgagaatta	tcgtagtatt	tttggttcgg	gagcgatcgt	4260
cgcgggtattt	tttaatttcgt	tagagcgggt	attaggaagc	ggggggaggg	gagcgaggag	4320
tttttcgggc	ggagatgcgg	tagttttcgt	atlttcgtat	ttcgggttg	tgtttcgggg	4380
tttcgtagcg	tttttagggcg	gagaattaa	tttgtgtggg	tggttttttt	tgggggtttt	4440

cgggttgctg	taggtgtgag	atcggaatgt	taatttgggg	aatttttttt	gttttttttt	4500
ttttaatttt	ttttatttgt	ttttgataag	ggtttatttt	tattggattt	gtaggtgatt	4560
atattgtttt	tttaggtcgt	tagtttttga	ttttagttag	tgattttggg	cggaagata	4620
ttttgtttat	tttttttttg	attttcgttt	tttatttttt	tagttaattt	tattttggat	4680
ttttgttttt	tttatttttt	ttttagagtt	gggttagggc	gttaattgga	agtttggggt	4740
taaatggtgt	aggaacgtag	aggcggagga	gtttttggga	ttttttacgt	ttattttttt	4800
atttttattt	tagtcgtagg	ggtttagttt	ggattgattt	aatttttcgt	tttttttttg	4860
taggcgatta	gtgggtgatc	gcggttgcca	gggattttgt	tattcgtttt	ttaggatttg	4920
gggagaaaga	gttttatttt	tttttttttt	gttattattt	cggatatttc	gtaggatttc	4980
gttttgggat	tcgtattgat	tttaagggaag	gacgcgaatt	tttttttgat	tttagttcgg	5040
gcggttattt	gtttttgtcg	cggtgatttt	ttttttatga	ttttgcggtg	ttttgagttt	5100
ttcgggaatg	gcggggaagg	gacgcggagt	tagtggggga	tcgcggggtc	ggcggaggag	5160
ttattttcgt	aggcggcgcg	tttgccgaag	gttttgccgg	agttcgggta	gataggtagg	5220
gagtcgatcg	gtcgcgacgc	gtgcgggagg	gagcgttttt	tttaagggaag	agttaggaag	5280
cggggtcgag	gtgggaagta	aagaataaga	tggaaatacg	ttttttgttt	tttaagggatc	5340
gcggagagta	cgttcgtagg	gttttggggt	tttggggaatg	cgtaaggaaa	gtggtttttt	5400
agggattttg	gtttggcgga	gcgtagagcg	cggaagaggt	tttttgaaa	tagtttttta	5460
gtacgttgga	agatttattg	tttttcgtag	ttgtttaggg	ttaggttttc	gggttcgaat	5520
ttcggtcggg	gaaagcgtcg	ggcgtttttt	tttgtacggg	gtgtaattag	taagtcggtg	5580
tcgcgggttt	cgtagggtta	gtagtatttt	gttttcgggc	ggagttgcgg	ttgtagttta	5640
ggattttggc	ggttaagttt	agggattgat	attgtcgcga	gggcggttgt	tcgggcgtcg	5700
agagtagggt	gcgaagtttt	cgtcgaagcg	ggtttttatg	gtcggcgcg	ttagggattt	5760
gtcgttttta	agtatagtta	ggtaattcgc	gcggtacgtt	gttttttaggt	atttgaaaaa	5820
agaaaaaaga	aaaaaagtaa	agtatttggt	aaattatttt	ggttttttaa	attcgtattt	5880
taaaagttta	tagttgtg					5898

<210> 25

<211> 5898

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 25

tataattgta	agtttttagg	atacggattt	ggaaagttag	aatgatttgt	tagatatttt	60
attttttttt	tttttttttt	tttttagatgt	ttagagatag	cgtgtcgcgc	gaattgtttg	120
attgtatttg	aaagcggtag	tattttgggc	gcgtcgatta	tggaagtcgc	gttcggcggg	180
ggtttcgtag	tttattttcg	acgttcgggt	agtcgttttc	gcggtagtgt	tagtttttga	240
atttggtcgt	taagattttg	ggttgtagtc	gtagtttcgt	tcgggagtta	gatgttggtg	300
ggtttgccgg	gttcgcggta	tcgattttgt	gattgtattt	cgtgtaaaag	gaggcgttcg	360
acgttttttt	cggtcggggt	tcgagttcgg	gagtttaatt	ttgagtagtt	gcggaaaata	420
gtaaattttt	tagcgtgtta	agaagttatt	tttaagaagt	tttttcgcgc	ttttgcgttt	480
cgttaggttt	gagtttttgg	agaattattt	tttttacgta	tttttaagga	tttaggattt	540
tgcgagcgtg	tttttcgcgc	ttttttggaa	gtaaggagac	tatttttatt	ttattttttg	600
ttttttattt	cgatttcgtt	tttttagttg	ttttttgggg	aggcgttttt	tttcgtacgc	660
gtcgcggtcg	atcggttttt	tatttgtttg	atcgagtttt	cgtagggttt	tcgttagacg	720
cgtcgtttgc	ggggatgggt	ttttcgtcga	tttcgcgggt	ttttattggt	ttcgcgtttt	780
tttttcgtta	ttttcggagg	gtttaaggta	tcgtagggtt	atgagagaag	ggttatcgcg	840
gtaagatag	gtggtcgttc	gagttggggt	tagagaaggg	ttcgcgtttt	tttttgaagt	900
tagtgcaaat	tttaaaacga	gtttttgcgg	gggtttcgaa	atgggtgtag	agagagaagg	960
gatgggggtt	ttttttttta	gattttggag	gacggatgat	aaagtttttc	gtagtcgcgg	1020
ttatttattg	atcgttttata	aagagaaagc	gggaggttgg	gttagtttaa	attggatttt	1080
tcgggttggg	gtgggggtgg	ggaaatagac	gtggaaaatt	ttagggattt	tttcgttttt	1140
acgtttttgt	attattttaat	tttaagtttt	tagtttagcgt	tttggttttag	tttttagagaa	1200
aagataaaga	gagtagagat	ttaagataaa	gttggttgaa	gaggtggggg	gcggagggtta	1260
ggaggagggt	gaatagggtg	ttttttcgtt	taggggttatt	agttgaaatt	aaagattggc	1320
gatttaggaa	gagtaaatag	ttattttag	atttagtggt	aatagggttt	tgtaagggat	1380
aagtagaaaa	aattaaaaag	gaaagaatag	gagagatttt	ttaaattggt	atttcggttt	1440
tatatttggc	gtagttcgag	ggtttttagg	aagaagtatt	tatataaatt	tggtttttcg	1500
ttttaaaagc	ttgcgggggt	tcgaggtatt	aattcggggg	gcggagggtc	gggagttgtc	1560
gtattttcgt	tcgggagggt	tttcgttttt	tttttttcgt	tttttggtgt	tcgttttggc	1620

ggggttggg	gtgtcgcggc	ggtcgttttc	ggattaggat	ggttgcgggtg	gttttcgtcg	1680
tcgcgggct	tgctcaggaa	tcggttcgag	cgcgtagttt	tcgcgggggtt	tcgagggcag	1740
gtcggggctg	agcgggcggt	cgcgagcggt	gcggaaaatg	taaattatta	acgtcgcgtt	1800
tttatttcga	tttcggtcgc	ggtcgtcgtc	ggtcgttttcg	tattaggtag	tttttttagc	1860
ggatatggg	cgggggggtg	gggggaaaag	gggaggtggg	aggggttcgg	gagaggaggg	1920
gcgtttgttt	ttgttttttt	cgtaaactgt	taatttggga	acgagatgtt	cggggatgta	1980
attagtttcg	cgttcggagg	cggcggtcgg	agtttcgtgc	gtagagggtg	tataaaagtt	2040
tcgaggatta	ttgtttcgat	tttatttttt	atcgcgcggc	gacgtttttt	acgggttggg	2100
atatttttat	tttcggattg	ttgtcgggtt	ttttttcggg	tcgcattttg	gaggtgggaa	2160
ggagagagg	agggaggagg	gaaggagcga	gggcggggagg	taggtcgggtg	gggaggagcg	2220
ggagattagg	ttattaggag	gattattaat	ttgaatggta	gtttagggga	aataaaaaaa	2280
agaaatttta	gatattttta	gacgtcagaa	aggggttggg	gaaagttagg	agtaacgtta	2340
ggtcgcgggg	tagagtcgcg	gttcggattt	tttttttttc	ggcgtttcga	gttgcgggaag	2400
tttaggtcgt	tcgtcgtttt	tcggcgtagc	cggtcgcgtt	tcgtcgtttt	tttcggtaat	2460
ttttttcggg	gcggagtttt	cgggtttttt	ttattatcgg	tatttgcgcg	gggcgttcga	2520
gttgcgggta	cggggtattt	tgaggttggt	tattcgggat	ttcggcgcg	attgttcgcg	2580
ggttacgcgg	tgaggtgggt	tgccggcgag	aggggttatg	ttttagggga	agtttaaggt	2640
tcgttagtcg	cggcggttgc	gacgagattt	ggtaagagtt	aaacgtcgg	tttaggagta	2700
gcgagtgcgc	gcgatttttt	agatcgacgc	gttttttttg	tttttcgttt	tttttttttag	2760
ttagcgtttc	gttcgcgttt	cgttcgggtt	ttgcggaggg	ggtttttttag	gaatttttta	2820
ggaatcgggt	ttacgtgatc	gcgggttttc	ttattgtttt	aaagagggtt	ggtcgtaata	2880
ttaggttttt	aggaagatc	gggtgagagc	gttcgggtgt	agggcgggcg	gtgtgtacgt	2940
cggggtcggg	ttgttttttg	ttttatatatt	cggggtgttc	gggcgtaagt	tagagatttt	3000
ttcggttatc	ggttatagtt	aatttcgttt	cggcggtcgg	agtttgtttt	ttattcgggt	3060
tagttgagcg	ttcgggttta	gggaaggata	gcgatttttg	gtttttgggt	tggtacgggg	3120
gtgggttttt	ttaaatatatt	cggcggcggt	ttttcgcgtc	gatttttttg	gtcgtatttt	3180
tgccgggggt	gggcgtgtag	gagcgattgt	gggttttcgg	aaattagatt	tttcggtttt	3240
aagatatatc	gatggcgtgg	ggacgtcgtg	ttcgttttcg	tgtttacggg	cggggatcgg	3300
aggcggtttt	tttgattagg	ttttggaagg	tagcagcgcg	gagagttagc	tttttttaag	3360
cggcgtcggg	cgttttttagt	tttttttttt	tgccgttttcg	gttttttggt	attcgtattt	3420
attcggtttt	tttttttttt	ttttttttttg	ttttaacgtt	ttcggtagat	tcggcggttc	3480
gttcgggtta	tttgcgtcgg	ttgttaaggg	ggcgttttta	tttgcgcgtt	cgggaagggg	3540
ttggtgattg	gtttcggttt	tttttagttc	gagagtgttt	ttgttatttt	ttgtagggtt	3600
gacgttttag	ggttgggatt	cgggaaggatt	tcggtatttt	tattttattt	gggattttta	3660
tttttaattt	cgttggagg	tttttggttt	tagtggaagt	ttattttttt	gtttgcgtat	3720
tcgttttcga	aatatgattt	atttgaaatg	tgatttattt	tttaaaagaa	atttttaata	3780
attacgggaa	aatcggattt	aaaatttcga	taagtatttt	tttttgaaat	attattttat	3840
tgtattattg	tcgaaagtt	tgaaagggtt	atggttattt	ttagttgagg	tcgcggttat	3900
gggaagttgg	gcgaggaagg	gggaggggtg	ggagggaggc	gcgttttgta	aattttgttt	3960
ggtgtttttt	ttgtcggttt	tgggaggaaa	cgggaattag	tttttaattt	tggggtttgt	4020
agtcggggat	taatggtttt	tttaataatt	tttttggttt	tgagtatata	attttatgta	4080
gatgataagt	agatgagtcg	gggagggggg	tatttttttag	tttaataaaga	gttttggttaa	4140
cgttggagtc	gtgtgttttt	aattatgttt	cgttttttag	aaagagtttt	ttatagtgtg	4200
ggcggagttt	attgaatttt	agttaaaatt	ttttataaag	tagttgaata	attttgtata	4260
aggattttat	tttttttgga	tttttggttt	tttttataat	atgaagggtt	agattcgggt	4320
tttggttgag	ggattgggat	aaaggaataa	attagatttt	atgtgaagtt	tgtgtatagt	4380
ttgaggtttt	aagtttttta	agaattatta	tgtttattag	ggtttaattgt	tttttaaaatt	4440
gttttaatat	ggttttttat	tttttgatgg	agaatttttag	aggaagggtg	tattttatatt	4500
ttagtttaaa	taaaaaggta	tttattttta	aaattgacgg	agggcgggga	gggagtatga	4560
ttaagttttt	ttttgtcgtt	taggttggag	tgtagggcgt	gatttttagt	tattgttaatt	4620
ttcgtttttt	aggtttaagt	aatttttttg	tttttagttt	tcgagaagtt	gggattatag	4680
gcgtttatta	ttacgttcgg	ttagtttttg	tatttttagt	agagacgggg	tttcgttttg	4740
ttggttaggt	tggtttcgaa	tttttggttt	taatcgattt	ttttgtttcg	gttttttaaa	4800
gtgtcgggtt	tataggcgtg	agttattttt	tttggtttta	atatttttat	atagtaagtt	4860
taatatattt	ttgatagtgg	gttgaaatga	atttttttagt	aatttttttt	ttatgtgttt	4920
ttttgttgtt	ttggtgtatg	ttgttttttt	tttttagaat	gttttaattt	tgatggttgt	4980
attatatatt	attaaaagaa	ttttgggtcg	gcgcggtggt	ttacgtttgt	aatttttagta	5040
ttttgggagg	ttgaggcggg	tggtattatt	gagggttagga	gtttaagatt	agtttggtta	5100
atatggtgaa	atatcgtttt	tattaaaaat	ataaaaatta	gtcgggtgtg	gtgggtgtatg	5160
tttgtaattt	tagttattag	ggagattgag	gtaggagaat	cgtttgaatt	cgggaggtgg	5220
aggttgtagt	gagtcgagac	ggtgttattg	tatttttagt	tgtttatttt	tttgatttta	5280
tttttttttg	ttttgttttt	tgattatttt	gtttaagtta	tattggattt	tttgtttaatt	5340
ttagaattta	ttagttttgt	ttttgtttta	gggtttttgt	atttgttgtt	ttttttattt	5400

tttatgtttt	tttttttagat	agttgttaagg	tttattttttt	tatttttttta	aattttttatt	5460
taatgtcgtt	tttttagtga	gatttttgttt	gttggtttat	ttagaattga	ttttttttttt	5520
gtatattttt	tttttttttt	tgtttttagtt	tttttttttaa	ttatgtttat	tattttaattt	5580
agtttatgtt	ttattttttt	agttttatttt	ttttttaatt	ttgttttatg	tatttgtatt	5640
tgtattgttt	atagttgtag	tttagtattt	tgaatatagt	tttttagtatg	tagtaggtat	5700
ttaatataat	tattgaatga	atggatggat	gaatgaatgg	atggatgaat	gaatgaatgt	5760
attagtatta	tggtttttaa	gttaagtgtt	ttaggtatga	atttttattt	tgttattatt	5820
tgttatatat	gtgatttttt	gtaattttatt	tagttttttt	tggagatgat	tatggttttt	5880
attttatagg	gttgtttgt					5898

<210> 26

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 26

ttgtttgtata	gaatattttta	ttattttaggt	attatgtcga	gtattttaata	gtttttttttt	60
ttgtttttttt	ttttttttttt	atttttgtatt	ttggagtttaa	ttatagtgtt	tgttgtttttt	120
ttgtttgtgt	tataagttttt	tattattttag	ttttttattta	taagtggaga	tattttagtat	180
ttggattttt	gtttttgtat	tagtttggtta	aggataatag	tttttagttt	tattttatgtt	240
tttataaaaag	atatgatttta	gttttttttta	atggtttgtat	taaatgaagt	tttaaagata	300
taatataaat	attaatttttt	ttttttattat	aaaaattttt	tggtgaattt	gatttatattt	360
aaattaacga	gtttttgtttt	atgaaagatt	ttttggataa	atttgatagt	tgatggaata	420
ggagaagtgt	tttgttatgt	ttaaagttaa	taagagatta	atatttagaa	taaatggaga	480
tttgtaaatt	aatagaaaagt	aggtagttaa	gttaaagaaa	atagtttaag	gtatagttat	540
taaaaggaac	gtgatttatgt	ttttttgtagg	gatatgggtg	gagttggaag	tcgttagttt	600
tagtaaat	atataggaat	agaaaattag	cgagatcgta	tggtttttatt	tataagtggg	660
agttgaataa	tgagaatata	tggttatatg	gcggcgatta	atatatattg	gtgtttgttg	720
agcgggggtg	tggggaggga	gagtatttag	aagaatagtt	aagggatatt	gggtttaata	780
tttgggtgat	gggatgattt	gtatagtaaa	ttattatggc	gtatatattt	atgtaataaa	840
tttgtatat	tttttatatgt	atttttagaat	tttaaataaa	agttggacgg	ttaggcgtgg	900
tggtttacgt	ttgtaatttt	agtatttttg	gaagtcgagg	cgtgtagatt	atttaagggt	960
aggagttcga	gattagttcg	gttaatatgg	tgaaatttcg	tttttattaa	aaatataaaa	1020
attagttaga	tgtggtacgt	atttataaatt	ttattttattc	gggaggttga	agtagaattg	1080
tttgaattcg	agaggcggag	gttgtagtga	gtcgtcgaga	tcgcgttatt	gtatttttagt	1140
ttgggttata	gcgtgagatt	acgtttataaa	ataaaataaa	ataatataaa	ataaaataaa	1200
ataaaataaa	ataaaataaa	ataaaataaa	ataaaataaa	ataaaaaaat	aaaataaaaat	1260
aaaataaaaat	aaagtaattt	ttttttttttt	aagcggttttt	tattttttttt	ttttgtttttg	1320
tgaagcgggt	gtgtaagttt	cgggatcgta	gcggttttag	ggaattttttt	ttcgcgatgt	1380
ttcggcgcgt	tagttcgttg	cgtatatattc	gttgcggttt	ttttttttggt	gtttgttttat	1440
tttttaggtt	tcgtttggga	tttgggaaaag	agggaaaggt	tttttcggtt	agttgcgcgg	1500
cgattttcggg	gatttttaggg	cgtttttttt	cggtcgacgt	tcggggtgta	gcggtcgtcg	1560
gggtttgggt	cggcgggagt	tcgcgggatt	ttttagaaga	gcggtcggcg	tcgtgattta	1620
gtattggggc	ggagcggggc	gggattattt	ttataaggtt	cggaggtcgc	gaggttttcg	1680
ttggagtttc	gtcgtcgtag	ttttcgttat	tagtgagtac	gcgcggttcg	cgttttcggg	1740
gatgggggtt	agagtttttta	gtatgggggt	aattcgtagt	attaggttcg	ggttttcggt	1800
agggtttttc	gtttattttcg	agattcggga	cgggggttta	ggggatttag	gacgttttta	1860
gtgtcgttag	cggttttttag	ggggttcggg	gcgtttcggg	gagggatggg	atttcggggg	1920
cggggagggg	gggtagattg	cgtttatcgc	gttttggtat	tttttttcgg	gttttagtaa	1980
attttttttt	gttcgttgta	gtgtcgttgt	atatcgttgt	ttatttttta	gttcgaggta	2040
ggagtattgt	tttggtaggg	aagggaggta	ggggttgggg	ttgtagttta	tagtttttcg	2100
tttatcggga	gagattcgaa	tttttttatt	ttttcgtcgt	gtggtttttta	tttcgggttt	2160
ttttttttgt	tttcgttttt	ttcgttatgt	ttgttttttcg	tttttagtgtt	gtgtgaaatt	2220
ttcggaggaa	tttgtttttt	tggtttttttt	ttgtattttt	gattttttttt	cgggttggtg	2280
cgaggcggag	tcgggttcggt	tttttatattt	cgtattttttt	tttttttcgta	ggtcgttcgcg	2340
cggtttttcg	tatgtttgtt	gtagattagg	gttagagttg	gaaggaggag	gtggtgatcg	2400
tggagacgtg	gtaggagggg	ttattttaaag	tttttttcggt	aagtgattat	gttcgggtaa	2460
ggggaggggg	tgttgggttt	taggggggtg	tgattaggat	t		2501

<210> 27  
 <211> 2501  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 27

gatttttagtt	atagtttttt	aaggtttagt	attttttttt	tttgttcggg	tatggttatt	60
tacgtaggag	gttttgagtg	agtttttttg	ttacgttttt	acggttatta	tttttttttt	120
ttagtttttg	ttttgatttg	ttagtagtat	gcgtagggtc	gcgtagcggg	ttgcggggag	180
ggagaagtac	gagatgtggg	gatcgggtcg	atttcgtttc	gtagtaattc	ggggaggggt	240
taggagtgt	gggagggaat	agggaaatag	gttttttcga	agattttata	taatatggg	300
gcggggagta	ggtatggcgg	gagaggcggg	gaataggaag	gaggttcggg	gtaaaagtta	360
tacgacggag	ggataagggg	gttcggattt	tttcgggtgg	gcgaggggtt	gtgggttgta	420
gttttagttt	ttgttttttt	tttttgtag	atatatgttt	ttatttcgaa	ttgggaaata	480
gattacgggtg	tagggcggta	ttgtagcgaa	taaagaaaag	tttgttggag	ttcgggggag	540
gatgttaagg	cgcggtgagc	gtagtttggt	tttttttttc	gttttcgggg	ttttattttt	600
tttcgaggcg	tttcgggttt	tttgaaagtc	gttaacggta	ttggggacgt	ttgggttttt	660
tttagttttc	gtttcgggtt	tcgaggtggg	cgaggagtgt	tgctgggagt	tcgggtttga	720
tggtgcgggt	tggtttttatg	ttgggagttt	tgagttttat	tttcggggac	gcgggtcgcg	780
cgtattttatt	ggtggcgaag	attgcggcgg	cgaaatttta	gcgaagggtt	cgcggttttc	840
gagttttata	aggggtggtt	cgtttcgttt	cgttttagtg	ttgagttacg	gcgtcggtcg	900
tttttttgga	gggtttcgcg	gattttcgtc	ggttttagtt	tcggcggtcg	ttgtatttcg	960
ggcgctcggtc	gtagaggggc	gttttgaggt	tttcggagtc	gtcgcgtagt	tggtcgggga	1020
agtttttttt	tttttttttag	gttttttagcg	gggttttaggg	agtaaataga	tagtaggaag	1080
aggatcgtag	cgaagtgtgc	gtagcgaatt	ggcgcgtcgg	gatatcgcg	ggggaaattt	1140
tttaagatcg	ttgcgatttc	ggagtttgta	tattcgtttt	atagggtagg	ggagagggtt	1200
ggaggtcggt	tagaggaaaag	gaaattgttt	tattttattt	tattttattt	tattttttta	1260
ttttattttta	ttttattttta	ttttattttta	ttttattttta	ttttattttta	ttttgtgtta	1320
ttttattttta	ttttatgacg	tagtttttacg	ttgtggttta	ggttggagtg	tagtggcgcg	1380
atttcggcgg	tttattgtaa	ttttcgtttt	tcgggtttta	gtaattttgt	tttagttttt	1440
cgagtaggtg	gaattatagg	tcggtgttat	atttggttga	tttttgtatt	tttagtagag	1500
acggggtttt	attatgtttg	tcgggtttgt	ttcgaatttt	tgatttttagg	tgatttgtac	1560
gtttcgggtt	tttaaagtgt	tcgggattata	ggcgtgagtt	attacgtttg	gtcgtttaat	1620
ttttatttga	agttttgggg	tatatgtaga	ggatgtgtag	gtttgttata	taggtgtgtg	1680
cgttatgatg	gtttgttgta	tagattattt	tattattttag	gtattaagtt	tagtattttt	1740
tagttatttt	ttttggtatt	tttttttttt	agtatttcgt	ttaataggta	ttagtgtgtg	1800
ttgatcgctg	ttatgtgatt	atgtgttttt	attgttttagt	ttttatttat	aagtgtgatt	1860
atgcgggttt	gttgggtttt	tgttttttgtg	tgagtttggt	gaggttaacg	gttttttagtt	1920
ttattttatgt	ttttgtaaag	gatatgatta	cgtttttttt	agtggttgtg	tttttaggtta	1980
tttttttttg	ttttgttggt	tatttttttgt	tgattttagt	atttttattt	attttagata	2040
ttgatttttt	gttgggtttta	gatatgatag	atagtttttt	ttattttatt	aattgttaag	2100
tttgtttaag	gagttttttta	tgaaataaaa	ttcgttaatt	taagtgtaat	taaatttagt	2160
aagggttttt	tggtgtgggg	aagaggttgg	tgtttatgtt	gtatttttta	aattttattt	2220
aatgtagtta	ttaaaaagaa	ttagattatg	ttttttgtgg	gaatatggat	ggagtttagag	2280
gttattattt	ttagtaaatt	aatgtaggaa	ttgaaattta	aatattggat	gtttttattt	2340
gtaagtggga	gttaaattgat	gagaatttat	aatataaata	aggaaataat	agatattgtg	2400
gttgatttta	gggtgttagga	tcgggaggaag	gagaggagta	gaaaagagaa	ttattgggta	2460
ttcgggtataa	tatttggggtg	atgaaatatt	ttgtataata	a		2501

<210> 28  
 <211> 2501  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 28

tttggatttt	aatgtgtatt	ttatatattat	agtataatta	atttgggatt	agttatatatt	60
tagtttaata	atagtttaata	gtatatggga	tagcgtaaat	aaattttgcg	tttttgttgt	120
ttttttgggt	ttcggagatt	tttaatttttt	tttttagattg	ttaaatttttt	tgttttttaag	180
tttcggtttt	aatattagtt	cggtagagga	atttagttta	atgagggtacg	tttttttttt	240
gttatttttt	attttatttaa	tttgtttcgt	ggtaaacgta	ggattgattt	tttaaaatta	300
ttttattaat	tagtttataat	attttattatt	tatttgtttt	attagaatgt	aggttttcgg	360
aaggtaggga	tttaaaaaaa	tttgttttgt	tttatgtgat	ttttttatat	taagtatcgt	420
gttcggtata	agttgggatt	ttagtatata	tttcgggacg	gaagaatcgt	gttttttttag	480
aatttagtta	gagggtagtt	tagtaatgtg	ttataggtgg	ggcgttcgcg	tttcgggagg	540
acgtattggg	ttttcggtcg	gcgtgggtgt	ggggcgagt	gggtgtgtcg	gggtgtgtcg	600
ggtagagcgc	gttagcgagt	tcggagcgcg	gagttgggag	gagtagcgag	cgtcgcgtag	660
aattcgtagc	gtcggttttg	tagggtagtt	cggaggtggg	tgggtcgcgt	cgttagttcg	720
tttgtagggg	ttttatttgt	cgtttgtcgg	tcgtttttcg	tttaaaaggc	ggtaaggagt	780
cgagagggtg	tttcggagtg	tgaggaggat	agtcggatcg	agttaacgtc	ggggattttg	840
tttttttcgc	ggaggggatt	cggtaattcg	tagcggtagg	gtttggggtc	ggcgtttggg	900
agggatttgc	gtttttttatt	tatttttttag	ttgtgttttc	gtcgtcgttt	cggtagtttt	960
tcggcggttg	cgttttatgg	cggttttcga	tagcgtttcg	gagggatcgg	gggagttttt	1020
aggcgttcgg	gtgagtagtt	aggcgcggtt	tttcggtttt	ttcgattttc	ggcgttagtt	1080
tttgtttttt	tagtttaggg	gcggtggggg	ttgttcgggt	agtgtttcga	gtaattggga	1140
aggttaaggc	ggaggggaaat	ttggtttcgg	ggagaagtgc	gatcgtagtc	gggaggtttt	1200
tttagtttcg	cgggtcgggt	gagaataggt	ggcgtcgggt	cgattaggcg	ttttgtgtcg	1260
gggcgcgagg	atttgagagc	aattgtttcg	tttcgggtgg	tcgttttttt	tttttttttg	1320
ttttttcggg	cggtcgtacg	tcgggtcggg	cgggtaacgg	agagggagtc	gttaggaatg	1380
tggtttttgg	gattgtttcg	ttcgggggag	gggagagggg	ggttacgggt	ttaggagagg	1440
cgcgggagtc	gagaggtggc	gcgggggtgt	tatcgtttgt	gtaggttggg	gagagattgt	1500
tttttagtgag	gcgcgtatcg	tttgggcgag	ggtttttatt	tttcgcggcg	tttttgagg	1560
tgggaaagtt	gggtgggtat	gtgtgtagag	aaaggggagg	cggggagggt	agttattttc	1620
ggagtcgggt	ttgatttttaa	tagatcgttt	agcgtttggg	gacgtcgttt	tcgggggtgt	1680
gtgggtgttcg	gttttacgcg	cgcgcggggg	tgaggggtcg	ggggcggttt	tggtcgttta	1740
gttttaataa	agggtgtttt	tttttatttc	gcgaggaggg	gtagtttcgg	agattcgggt	1800
tttagcgagc	ggggtttttag	cgtcggggag	gtttattttt	ttttgggggt	gttattttat	1860
tattattatt	gttttttttt	tttttttaaa	aggattggag	attgatgtat	gaggggggta	1920
cggaggcgta	ggagcgggtg	tgatggtttg	ggaagcggag	ttgaagtgtt	ttgggttttg	1980
gtgaggcggt	atagttttatt	atgatcgtgt	ttaggttagga	aaacgtggat	gattattacg	2040
atatcggcga	ggaattttgt	aggtaaagg	ggtatttagaa	gcgtattttt	ttggattgtg	2100
gaaatgtata	acgatgggtt	tattgggtgg	taaataaatg	tagtttgaat	taggcgtttt	2160
tttcgttttt	tttgagagtg	cgtaaattat	agagaaaaga	gttatttaatt	tagcgggttaa	2220
tcgttttgatt	taagggtttg	gggggtggagg	agaggtagta	gtttagggtt	agattatgat	2280
gtatagtata	ttgatttagt	tttttgata	aaattagatt	taattgttcg	tgtaattttt	2340
tgtttagttt	tgtttttttg	tgataatagg	ataaatatta	agattataat	tgtaattgga	2400
gttagttttt	atgtgtgatt	taaacggagg	gtataaatta	attaataggt	tttaaaaaatt	2460
ttagtatttt	attttttatt	taaattttta	gtgtaatttg	a		2501

<210> 29

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 29

ttaaattata	ttgaaaattt	agatagaggg	taaagtatta	agatttttta	aattttattaa	60
ttagtttgta	tttttcgttt	aaattatata	taaaagttaa	ttttaattgt	aattataatt	120
ttagtgtttg	ttttgttgtt	atagaagggg	aagggttgat	aagagttagt	acggataatt	180
aaatttgatt	ttgtttaggg	gattggatta	atatattgtg	tattataatt	tagttttgaa	240
ttgttgtttt	ttttttattt	ttaggttttt	ggattaggcg	gtttatcgtt	gggttagtaa	300
tttttttttt	tatgatttgc	gtattttttag	aaagggcgag	ggagacgttt	gattttaaatt	360
gtatttgttt	attattttaat	ggtttttatcg	ttatgtattt	ttataattta	ggagggtagc	420
tttttggtat	tttttttatt	tgtaagtttt	ttcgtcgggt	tcgtagtaat	tatttacgtt	480
tttttggttg	aatacggtta	tgataaattg	ttacgtttta	ttaaagttta	gggtattttta	540
gtttcgtttt	ttagattatt	attatcgttt	ttcgtttttc	gtagtttttt	tatgtattag	600



tttttagttt	ttttgaagaa	aaaaaaaagg	taataataat	agtaaaatgg	taatttttaa	660
aggaagtaga	ttttttcggc	gttaagattt	cgttcggtga	agatcgggtt	ttcggagttg	720
tttttttttcg	cggggtggag	aggagtattt	tttggttaaag	ttgggcgggt	agggacgttt	780
tcgattttttt	agtttcgcgc	gcgcgtgggg	tcgggtatta	cggatatttcg	aggtcggcgt	840
ttttaaacgt	tgggcgggtt	gttgggatta	gaatcgggtt	cggaaagtga	tggttttttc	900
gtttttttttt	tttttgata	tatgtttatt	tagttttttt	attttttaggg	acgtcgcgga	960
agaatgaagt	tttcgttttag	acggtacgcg	ttttattggg	agtaattttt	tttttagttg	1020
cggtaacggg	ggtatttttcg	cgttattttt	cggttttcgc	gtttttttta	atatcgtggt	1080
tattttttttt	tttttttcga	gcgaggtagt	tttttagagt	atattttttg	cgattttttt	1140
ttcgttattc	ggtcgattcg	gcgtgcggtc	gttcggggga	gtaagggagg	gaagggagcg	1200
gtttatcgag	gcgtagtagt	tcgttttaga	ttttcgcgtt	tcgatataaa	gcgtttggtc	1260
gggtcggcgt	tatttgtttt	tattcggttc	gcgggggttg	ggaagttttt	cggttgcgat	1320
cgtattttttt	ttcgaagtta	agtttttttt	cgttttggtt	tttttagttg	ttcggaggtat	1380
tgttcggata	aatttttatcg	cgttttggtt	gggaaagtta	aagttagcgt	cggggggtcgg	1440
gggatcggg	gagtcgcggt	tggttattta	ttcgggcgtt	tgggagtttt	ttcgggtttt	1500
tcggagcgtt	gtcggaggtc	gattataggg	gttagcgtcg	gagattagtc	ggggcggcgg	1560
cgggaatata	gttagggagt	gagtgggggg	cgtagatttt	ttttaggcgt	cggtttttaga	1620
ttttgtcgtt	gcgagttgtc	gagttttttt	cgcgaggagg	ataaagtttt	cggcgttggt	1680
tcggttcggt	tggttttttt	atatttcgaa	gtagtttttc	ggttttttgt	cgtttttttg	1740
gcggagggcg	gtcggtaggc	gtttaatggg	gattttgtta	gcgggttggc	ggcgcggttt	1800
atttatttttc	gagttgtttt	gttaggtcgg	cgttgccgggt	tttgcgcggc	gttcgttggt	1860
tttttttagtt	tcgcgttttcg	ggttcgtttg	cgcgttttat	cgcgtatatt	tcgtatatat	1920
ttattcgttt	tatatattacg	tcggtcgggg	agtttagtcg	ttcgttcgga	acgcgggcgt	1980
tttatttgtg	atataattgt	aagttgtttt	ttgattgggt	tttagggaaa	tacggttttt	2040
tcgttttcgag	atgtgtattg	ggatttttagt	ttgtgtcggg	tacggtgttt	ggtaggggaa	2100
aattatatag	aataaaatag	attttttttaa	atttttgttt	ttcggaaatt	tgtatttttg	2160
tgggatagat	agataataaa	tatgtaagtt	aattaataag	gtaatttttg	aggattagtt	2220
ttacgtttat	tacgaaatag	gttaatggaa	tagagaatgg	taggaaggga	gcgtatttta	2280
ttagattggg	ttttttttgtc	ggattgggtg	tggagtcgag	gtttgaagg	aagaagggtt	2340
gtaatttgaa	gaaagggttg	aggtttttcga	gatttaaaga	agtaatatag	acgtagagtt	2400
tatttgcgtt	attttatatg	ttattgggta	ttgttgagtt	gaaatgtagt	tagtttttaa	2460
ttaattgtgt	tgtaagtgtg	aaatatatat	tagagtttaa	g		2501

<210> 30

<211> 4501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 30

tttatttggt	ttataggatt	ttttatggaa	ttttggagtt	tttgaggcga	gagggatttt	60
ggatattatt	gagttttatt	ttttatttaa	taaatataga	agtggacgtt	tggataggta	120
aagtgatttg	attaaggtag	gtgtatagtt	attttgtaat	attgggaata	aatttttaggt	180
tttttgattt	tttggtttta	ttttattttt	tttttatttt	ttagaaataa	agtttttatg	240
tggttttttt	tatagtata	tggttggaat	gtattagttt	gtaatttagg	aagggaaaaa	300
aataaatata	taagagataa	atttgttagg	aggataaatt	tgtattgttt	ttgattgggt	360
tagagggtga	ttattattat	ggtagagaat	tattttaatta	gtgtaagtaa	aatttttttg	420
tgggttgggt	attgtataaa	gatttaaacg	aatttgttta	tagatttgaa	aagtagatac	480
gagatttggt	aatgggtggg	gtttttaagt	ttatagtata	agtatgggtt	atattttata	540
gtttggagga	ttgagttttg	aaaatgggta	agttttttta	tttttttgaa	ttttattttt	600
tttatattta	aaataaggat	gagtagtttt	tgaggttttt	tttacgattt	ttttttttat	660
agatttttagt	atttttataat	ttgatataaa	gagggtggat	atgaatttat	tttttttaga	720
aaagtttttag	gaaagagaat	attagggttat	tttagtaggt	gtgtagatag	gttagataga	780
ttttgaaatt	tatttagttt	tttttagatg	tataattttt	ttattgtttt	tagttgttaa	840
gagaaagtag	gagagtttgt	atttttattt	tttttttttt	tttttttttt	tttgagagacg	900
gagttttatt	ttattattta	ggtagagtgt	tagtggtatg	attttagttt	attgtaagtt	960
tcgtttttta	ggtttacgtt	atttttttgt	tttagttttt	taagtaattg	ggattatagg	1020
cgtttattat	tatatttggt	taattttttg	tggtgttagt	atagacgggg	ttttattatg	1080
ttagtttagga	tggtttcgat	tttttgattt	cgtgattcgt	ttattttggt	tttttaaagt	1140
gttgggatta	taggcgtgag	ttatcgtatt	tagtttgtat	ttttattttt	attgtttagtt	1200

ttaggtttat	tttatttagt	ttattaagtg	atgttgaata	attaatTTTT	atatattatt	1260
agggtttatgg	atattatgat	atntagattg	atgggtgttt	gttgaagggg	gtgatttttag	1320
taggaggatt	tttttacgta	aggatttatg	gagtttggtg	tttttttttt	ttaggggtgag	1380
aattaaattg	tttttatacg	gtgggtagag	gggaattgat	ttaggtttgg	aataagagag	1440
aataattttaa	ttgaaaagtt	tttggaattc	gttgaatttt	aagatattgt	gtggattagt	1500
ttaggatagg	gagtgagaag	aaattaatta	aaaggtaatt	tcgttatttt	ttagttggaa	1560
aaaagattag	atttatattt	tgttttttata	attaagtagt	tgttggaaaa	aaacgtttta	1620
gatgtttttt	atgagaaaaat	tgttgtttga	agtttagtag	aagttattta	tttgatattt	1680
atatttttagg	taaggttttt	cgttggagaa	aatatcggta	ttttggataa	aattgaaatg	1740
tgaaaagaaa	gggaagagag	ggttttttatt	atgtaagatg	tttattttaa	gtggatttgg	1800
tttggaaagt	tttttaaaat	tttttatatg	attgtggaat	aagttatgtg	gggcgcgggg	1860
ataagcgaat	tttttaaatt	ttattacgta	tgttttttatt	taatttggat	tttttagagt	1920
gttttttaggg	tattttgttt	aggatttagt	tagttgttgg	ttatatattt	gttttttagt	1980
tttttgagat	tttatttggg	tttgagaggg	ttaaaaagta	gtgtggttaa	atattttagg	2040
ttttaaagta	tttttattgt	ggttggggaa	gtaatagaat	tatatatttt	aaaataatga	2100
aaatagtgtt	agaaaaatat	cgagagatag	aaatattttt	acgagtttag	ttatagttag	2160
agtgaaggta	gggaagggtt	ttaaagttgg	gtggagggga	taagttaaaa	agatgtggaa	2220
attgggtttt	tttttttatg	gttaaagtgt	ttaaagggga	aaaaggagtt	ttaaaaatgt	2280
ttttggaaat	attatttttt	acgaattttt	cggtttttgt	tgtttttaat	ttatttgttt	2340
gagatgtaaa	tagaggagtt	ttgagaaaga	agttgaattt	gtattttttt	ttgtttttat	2400
ttgttttaaa	tttgtggtat	ttttaatagg	atgaagcgga	agagaaagg	aaagagataa	2460
aagtgtagaa	agatggaaga	ttttagtgtt	aaatggttat	ttgtagttag	atggaatagt	2520
tgttgacgtt	tagggaaatg	tatgtttttt	tttagatggg	aaggagtagt	ggaaaggggt	2580
gacgagtttt	tgggtgggta	tttaattatt	tatttttttg	tgtcggtttt	ttatttggaa	2640
agtgggagtg	atatttgtgt	ttgttttttt	tattttataaa	gattattgtg	agagttataa	2700
tacggtgaga	tatagaattt	tgtttttaaa	aatataaagt	agaattaaga	tgtaataaat	2760
aaggatagta	attgtgttag	ttatttgtaa	ttatttatta	tagttagtcg	tttaggattt	2820
tggatcggtt	ttttgggttt	attatagttt	tggattagtt	tattttttaa	ttttttgttg	2880
aagggtggag	ttttgttagt	tatgggtagg	gaattatttt	tttttgtttt	tttatttttt	2940
gttttttaaa	tatgttttag	gtttttgtat	ttgttgtttt	ttttgtttgg	tatttttttt	3000
ttgtgggttg	tttttagagt	gatttttgtt	tttgtttatt	tttttagcga	gatgggtatt	3060
tagggagttt	tttttttatt	atcgtagaga	gagtaggttt	tttttagtta	tgtttaattt	3120
agaattttgt	ttgttttttt	ttatagtttt	agtattatag	aaaattattt	tgtgtattta	3180
tggatgttta	cgggggtaa	ggttttgtgt	tgtttaattt	agtattttga	atcgtgtttg	3240
ttgaatgaat	atagaatttc	gtttgttttg	ggagagtata	gaaaatagtt	ttttattata	3300
tattatagtt	agttgtaa	agtagatggt	tttttatatt	ttagagagta	agaattagag	3360
agagagagaa	agagagagag	tttgggtttt	ttttttttgt	gtttgttttt	tttagagaaa	3420
ttggaggggt	agtagttagt	attttttcgt	tggttttatt	aagtatagtt	aagggtttta	3480
ggatatggtt	attttttatt	tgtggaagcg	gttttgttgg	ggtgggtggg	tgttagttgg	3540
ttttgggttg	ggttagagat	atttagtggt	ttaggtgggc	gtggggttag	ggcgtagacg	3600
agaaggggta	cgagggtttc	gtttcgagga	tttagcggta	agtatcgggt	tcgggcgcgt	3660
tttagtttat	ttattcgcgt	gtttacggcg	gtattatttt	ttataaggat	ttgaacgatt	3720
cgggggcggg	ttcgtttcgt	tattttttgt	tttcggtttc	gttttttttt	tggaggggtcg	3780
atgaggtaat	gcggttttgt	tattgggttg	agggggcggg	ttttaatagt	tcgagggcg	3840
gttttcgggg	gtttagcgtt	atattattcg	gtcgttttag	tagcggcgta	gagcgggtag	3900
taggtaggcg	gcgggcgttt	agacggtttt	tttttttttt	tttgtttttt	tagtttttgt	3960
tttttcgtcg	ggaggtcggt	cgtcgagttt	tgcgttagcg	tcgaggtagt	ttcgttgcgt	4020
tttatttcgt	ttcgtcgggt	attcggagg	tagcgcgtcg	gaggttaagg	ttgtttcgta	4080
cgggttcggcg	ggcgagcgag	ttcgggttgt	agtagtttcg	tcggcggcgc	gtacggtaat	4140
tttgagagag	cgagtagtag	tttcggtagc	ggcggtagta	gcggtaatga	ttttttggtt	4200
cgggtttatc	gtgttttttg	gtagttggag	tttgggggat	tggggcgctcg	aggcgtgtat	4260
atgttcgttt	agttattttt	aggacgtttt	ttgtaatttc	gatatacggt	agcgtttttg	4320
gtgtttcgtt	cgagttttac	gttgtagtta	ggattgttag	gttgttttag	gaggtagggc	4380
gagttttatt	tttttttttt	gttttaggag	aggggtagac	ggggttgggg	cggagtggag	4440
aaattcga	tttttgggcg	ggggcggttg	tatagtttag	aggggaagat	gtttttaga	4500
g						4501

<210> 31

<211> 4501

<212> DNA

<213> Artificial Sequence

<220>



<223> chemically treated genomic DNA (Homo sapiens)

<400> 31

ttttgtaggg	tatttttttt	ttttagttat	gttagcggtt	tcgtttaagg	ataticgagtt	60
tttttatttc	gttttaattt	cgtttggttt	ttttttgggg	tagaggaaag	gagtgggggtt	120
cgttttgttt	ttttaagtag	cgttgtagtt	ttggttgtag	cgtaggggttc	gggagggggta	180
ttaggagcgt	ttatcgatgt	cggagttgta	gaaggcggtt	tgggggtggt	tgggagagta	240
tgtgtacgtt	tcggcggttt	agtttttttag	gttttagttg	tttaggagta	cgatgagttc	300
gagttaaggg	gttattgtcg	ttgttgctcg	cgttgtcggt	gttgtgttgc	gttttttttaa	360
agttgtcgtg	cgcgtcgtcg	gcgggggttg	tgtagttcga	gttcgttcgt	tcgtcggttc	420
gtgcggggta	attttggttt	tcggcgcggt	gtttttcgag	tggtcggcgg	gacgggatgg	480
ggcgtagcga	ggttggtttc	gcgttgccgt	aggattcggc	gggcgggttt	tcggcgaaag	540
agtaggagtt	ggagagtaga	gaggaggagg	agaagtcgtt	tgagcgttcg	tcgtttgttt	600
gttggttcgtt	ttgcgtcggt	gtttgggcgg	tcgagtata	tagcgttggt	ttttcgggga	660
tttcgtttcg	gggtgttggt	gttcgttttt	ttagattaat	ggtagagtcg	tattatttta	720
tcggtttttt	aaaaaggggg	cggggtcggg	ggtaaggggt	aacggggcgg	ggtcgttttc	780
ggatcgttta	gattttttata	gggaataatg	tcgtcgtggg	tacgcgagtg	ggtaggggtg	840
ggcgcgttcg	ggatcggtgt	ttgtcgttgg	gttttcggag	cggagttttc	gtgttttttt	900
tcgtttgcgt	tttggtttta	cgtttatttg	ggttattggg	tgtttttgat	ttaaattaga	960
attaattaat	atttattttat	tttagtagga	tcgtttttat	aggtgagggg	tggttatggt	1020
ttagagattt	tgattgtggt	tggtggaatt	agcgggggaa	tggttaattgt	tatttttttta	1080
gttttttttg	agagagtagg	tatagaggag	aaagatttta	attttttttt	tttttttttt	1140
tttttggttt	ttattttttg	ggatatggga	agttatttgt	tgtttgtagt	tggttatgat	1200
atatgataga	agattgtttt	ttgtgttttt	ttagagtaaa	cgggggtttg	tatttattta	1260
ataaatacgg	tttaggatgt	tgggttaagt	aatataaagt	ttttgttttc	gtggatattt	1320
atgaatgtat	agggtgattt	tttgtgatgt	taggggttat	aagaaaataa	aatagagttt	1380
tgggttggtat	atgattgggg	agggtttggt	ttttttgcga	tagtaaggga	agggtttttt	1440
gaagtgttat	tttcgttgag	aagtggataa	agataaggat	tagtttttgg	gtaagtata	1500
ggagagaggt	attaggtagg	gggaatagta	agtgtaaaga	ttttgggtat	gtttgaaaga	1560
tagaaagttag	aaaggtaaga	ggaagtgggt	ttttgtttat	ggttgataga	gttttatttt	1620
ttagtaaggg	atttgggggt	gagttgattt	aaaattgtag	taaaattagg	agaacgattt	1680
aggatttttag	acgattagtt	ataatagatg	attgtagata	attaatataa	ttattatttt	1740
tattattgat	attttgattt	tgtttttgat	ttttaaaagt	aggattttgt	attttatcgt	1800
attatagttt	ttataataat	ttttgtgggt	aggaaaagta	agtataagta	ttatttttat	1860
tttttagatg	aggaatcgtt	atagaaagat	gggatgattg	gtggttagtt	aggaattcgt	1920
tatttttttt	tattgttttt	ttttatttga	agagagatat	gtattttttt	gaacgttagt	1980
agttgtttta	tttaattgta	aatggttatt	tgtagttggg	attttttatt	tttttatatt	2040
tttggttttt	tttttttttt	tttcggtttta	ttttgttata	aatgttataa	gtttggaata	2100
aatagaaata	gggagaaatg	taagtttagt	ttttttttta	gaattttttt	gttttatatt	2160
tagataagtg	atattgggat	agtagaggtc	gaagaattcg	tgagagatgg	tatttttaag	2220
aatatttttg	aaattttttt	tttttttttg	agtatttttag	ttataggaaa	gggaaattag	2280
tttttatatt	tttttgattt	gtttttttta	tttagtttta	aaaatttttt	ttgtttttat	2340
tttaattgtg	gtttaattcg	tagagatggt	tttgtttttc	gatgtttttt	tagtattggt	2400
tttattgttt	tatgggggat	gatttttatt	tttttttaat	tatagtagga	atatttttag	2460
gtttgggata	tttagttata	ttgtttttta	gttttttttag	aattaaatag	ggtttttaga	2520
gattggagag	tatgggtgtg	gttaatagtt	gattgagttt	tgagtagagt	gttttgagg	2580
ttatttttaag	gatttaggtt	gaatgagggg	atacgtggtg	gaatttgaga	gattcgttta	2640
ttttcgcggt	ttatatgatt	tatttttatag	ttatgtggaa	ggtttttagaa	gatttttttag	2700
attaaattta	ttttggataa	gtatttttata	tgatagaggt	tttttttttt	tttttttttt	2760
atatttttagt	tttgttttaa	gtgtcgatat	tttttttaac	ggaagggttt	gtttggaata	2820
taagtattaa	gtagataatt	tttggtgaat	tttaagtagt	agttttttta	tagaaagtat	2880
ttgaagcgtt	tttttttagt	agttatttta	ttatgaaagt	ataagtataa	tttgattttt	2940
tttttagttg	aaaagtaacg	aaattatttt	ttggtttaatt	tttttttatt	ttttatttta	3000
agttggttta	tatagtgttt	tgaagtttag	cgaattttta	gagtttttta	gttgggatgt	3060
tttttttttat	tttaaaattg	agttagtttt	ttttgtttta	tcgtgtgaag	gtagtttggt	3120
ttttatttta	aggaaaagaa	atagtaaatt	ttatgaattt	ttgcgtaggg	gagttttttt	3180
gttaggggta	tttttttttag	taggtatttta	ttagtttgga	tgttatggtg	tttatgagtt	3240
taataatatg	taagaattgg	ttattttaata	ttattttaata	agttaggtgg	ggtgaatttg	3300
aggttaatag	taagaatgaa	gatgtaggtt	gggtgcgggtg	gtttacgttt	gtaatttttag	3360
tattttgaga	ggttaagggtg	ggcgggattac	gaggttagga	gatcgagatt	attttggtta	3420
atatggtgaa	atttcgtttg	tattaataat	ataaaaaatt	agttaggtgt	ggtgggtggc	3480
gtttgtagtt	ttagttattt	gggaggttga	ggtaggagaa	tggcgtgaat	ttgggaggcg	3540

gagttttag	tgagttgaga	ttatgttatt	gtatttttagt	ttaggtgatg	gagtgagatt	3600
tcgtttttta	aaaaaaaaaa	aaaaaaaaaa	agaatgaaga	tgtaggtttt	tttgtttttt	3660
tttgatagtt	aagaataatg	atagagttat	atatttgga	agaattgagt	aagttttaag	3720
atatttttg	tttgtttata	tattttattag	gatgatttgg	tatttttttt	tttgggaattt	3780
tttttaggaaa	ggtgagttta	tattttatttt	ttttgtatta	agttatagga	tgtttagagtt	3840
tgtaggaaga	gaagtcgtaa	aaaggatttt	agaaattatt	tatttttgtt	ttaaatgtgg	3900
gaaaaataag	gttttagagaa	gtgaaggaat	ttgtttatatt	ttagggttta	gttttttaag	3960
ttgtaagggtg	tggtttatgt	ttgtattgtg	ggtttgga	ttttagtatt	ttatagattt	4020
cgtattttgtt	tttttagattt	gtagatagat	tcgtttgagt	ttttgtatag	tgtttagttt	4080
atagagaaat	tttatttata	ttgattaaat	aattttttat	tatgataata	attatttttt	4140
gagttaatta	gaagtaatat	aggtttgttt	ttttgatagg	tttatttttt	gtgtgtttat	4200
tttttttttt	ttttaaatta	ttagttaatg	tatttttaaat	atattattat	aaaaaaaagt	4260
atatgaaaat	tttgtttttg	ggaaatgaaa	agagagtaaa	gtggaaataa	aaaattaaaa	4320
gatttgagat	ttgtttttta	tggtgtagaa	tagttgtgta	tttgttttgg	ttaagttatt	4380
ttgtttgttt	aggcgtttat	ttttgtgttt	attggatgaa	agatagaatt	tagtggtatt	4440
taggattttt	ttcgttttaa	aaattttaag	attttatggg	gaattttgta	ggataagtga	4500
a						4501

<210> 32

<211> 7928

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 32

aacgttaagg	atatttgagg	atagagtttt	atatttttta	tacgagatag	ggatattttag	60
ggatagcgtt	ttattttatt	tgtattttgag	agggatatct	gggggtcgt	atatttttat	120
tttatacgtg	atagggatat	tcggggacgg	cgttttattt	attttatacg	tgatagggat	180
attcggggat	ggcgttttat	ttattttata	tttgagaggg	atatttaggg	acggcgtttt	240
atatttttta	tacgtgatag	agatattcgg	ggatagtgtt	ttattttatt	tatacgtgat	300
agggatatct	ggggacgggg	ttttattttt	tttgtacgtg	atagggatat	tcggggacgg	360
cgttttattt	atttttatacg	tgatagggat	attcggggac	ggcgttttat	ttattttata	420
cgtgataggg	atatttcggg	acggcgtttt	atttatttta	tacgtgatag	ggatattcgg	480
ggacggcgtt	ttattttatt	tatacgtgat	agggatatct	ggggacggcg	ttttattttat	540
tttgtacgtg	atagggatac	gcggggacgg	cgttttattt	attttgtacg	tgatagggat	600
attcgggggt	ttcgcgttaa	ttattttgta	cgtgataggg	atattcgggg	acggcgtttt	660
atttattttg	tacgtgatag	ggatattcgg	ggatagtgtt	ttattttatt	tatacgtgat	720
agggatatct	ggggatcgcg	ttttattttt	tttgaacgtg	atagggatat	tcggggatag	780
tgttttattt	attttgtaag	tgatagggat	attcgggggt	cgcgttttat	ttattttgta	840
cgtgataggg	atattcgggg	gtcgtgtttt	atttattttg	tacgtgatag	ggatattcgg	900
gggtcgcgtt	ttattttatt	tgtacgtgat	agggatatct	gggggtcgcg	ttttattttat	960
tttgtacgtg	atagggatat	tcgggggtcg	cgttttattt	attttatacg	tgatagggat	1020
attcgggggt	cgcgttttat	ttattttgta	cgtgataggg	atattcgggg	gtcgcgtttt	1080
atttattttta	tacgtgatag	ggatattcgg	ggatagtgtt	ttattttatt	tatacgtgat	1140
agtgatattc	ggggatcgcg	ttttattttt	tttatacgtg	atagggatat	tcgggggtcg	1200
tgttttattt	attttgaacg	tgatagggat	attcggggac	ggcgttttat	ttattttata	1260
cgtgataggg	atattcgggg	acggtatttt	atttatttta	tacgtgatag	ggatattcgg	1320
ggacggcgtt	ttattttatt	tgtacgtgat	agggatacgc	ggggacggcg	ttttattttat	1380
tttgtacgtg	atagggatat	tcgggggttt	cgcgttaatt	attttgtacg	tgatagggat	1440
attcggggat	agcgttttat	ttattttgta	cgtgataggg	atattcgggg	acggtgtttt	1500
atttattttta	tacgtgatag	ggatattcgg	ggatcgcgtt	ttattttatt	tgaacgtgat	1560
agggatatct	ggggatagtg	ttttattttt	tttatacggg	atagggatat	tcggggatcg	1620
tgttttattt	attttgtacg	tgatagggat	attcggggat	cgcgttttat	ttattttgta	1680
cgtgataggg	atattcgggg	atcgcgtttt	atttattttg	tacgtgatag	ggatattcgg	1740
ggatcgcgtt	ttattttatt	tgtacgtgat	agggatatct	gggggtcgcg	ttttattttat	1800
tttgtacgtg	atagggatat	tcgggggtcg	cgttttattt	attttgtacg	tgatagggat	1860
attcgggggt	cgtgttttat	ttattttgta	cgtgataggg	atattcgggg	acggcgtttt	1920
atttattttg	tacgggatag	ggatattttg	ggatcgcgtt	ttattttatt	tgtacgggat	1980
agggatatct	ggggatagtg	ttttattttt	tttatacgtg	atagggatat	ttggggatcg	2040
cgttttattt	attttgtacg	tgatagggat	attcggggat	agtgttttat	ttattttata	2100

tttgggaggg	atatttaggg	acggtgtttt	atatttttta	tacgtgatag	ggatatttgg	2160
ggtcgcgttt	tattttattt	atatttgaga	gggatattcg	gggatagcgt	tttattttatt	2220
ttatatattg	gagggatatt	tagggacggt	gtttttattt	ttttatacgt	gatagggata	2280
ttcggggatc	gcgtttttatt	tattttgtac	gtgataggga	tattcgggga	tagcgtttta	2340
tttattttgt	acgggatagg	gatatttcgg	gattacgttt	tattttattt	atacgtgata	2400
gggatattcg	gggacggcgt	tttattttatt	ttatatattg	gagggatatt	cggggatagt	2460
gtttttattt	ttttatacgt	gatagggata	ttcggggatc	gcgtttttatt	tattttgtac	2520
gtgataggga	tattcgggga	tagtgtttta	tttattttgt	acgggatagg	gatatttcgg	2580
ggttatatatt	taattacgtt	gtacgggata	gggatattcg	ggggtcgcgt	tttattttatt	2640
ttatacgtga	tagggatatt	tgggggtaac	gtttttattt	ttttgtacgt	gatagggata	2700
ttcgggggatt	acgtttttatt	ttttgtataa	gttaggggta	gatttgtgatt	ttatttgaag	2760
ttagagaata	gtaatgatag	gtagagtttt	gatttagagaa	tttaaatttt	ttttaacgaa	2820
ggaagttaga	gtataaaaag	taaaattggg	ttgtatgacg	tttattttgat	tcggcgtggg	2880
ttattttgagt	cgtagtaggt	gtgaggtagt	tgtcgttcga	tgggtaggga	tttttagtta	2940
cgtaaagacgt	agtatttttaa	gtaattttgt	gtaaaatatc	tcgagttagt	aatttttgat	3000
tgtatataga	aaacggtgtt	aggagtgtta	attttatgtt	atatgatttt	tgttattata	3060
aaaagaaaaa	aagaaaaaaa	agagtttttaa	gaaggttatt	ttttttgttt	gtatggtcgg	3120
aagttttata	tgttttggga	gtttgtgggg	agggggtgaa	atcgggattt	tttttagttg	3180
ttacggtagg	gtttgggagt	attgggagtt	aaaagggggt	tggagcggag	gttttttaaat	3240
attaaattta	gaaaaatagg	gtggggatac	ggtagggttt	agtagtatta	ttttttgaat	3300
atttataaat	attgtttttt	tttttagtagg	tggagtattt	tggtgttttt	tggtttttatg	3360
tggttttttt	tatatttaaa	gatgggatta	ggatttgtgt	tggagaatag	ttttattttt	3420
ttttttttat	tttgttttgg	tataattaac	gaatattttt	tttttttaaa	gatagagttt	3480
tattttttgtc	gtttaggttg	gagtataatg	gtataatttt	agtttattgt	agttttcgtt	3540
ttttgggttt	aagtgatttt	tttgttttag	ttttttaagt	agttgggatt	ataggatat	3600
attattatgt	ttagttaatt	tttgtatttt	tagtatagat	agggttttat	tatgttggtt	3660
aggttgggtt	taaattttttg	attttaggtg	atttatttgt	tttagttttt	taaagtgttg	3720
ggattatcgg	cgtgagttat	cgtatttggt	cgttaatata	taattaaatt	ttaaatataa	3780
atttgtatat	tggttgatta	cgtgtatttt	taaaattttt	attttttatt	tttaggaaga	3840
gggggttttt	gtttttattt	tttatttttta	tttttgaaat	tgcaagagg	attataggta	3900
atttgtaggt	attttcgtta	gagcgtttgt	gttttttagat	attttttttt	attgtcggta	3960
attcggtttt	attgtcgcgt	ttagtttttt	ttgtttattg	ttttggtttc	ggcgttttga	4020
aatcgcgtgt	ttattaaaac	gtgaagggtg	atttcgttaag	tttatgtaaa	ttggataggga	4080
gggagagtag	aggtagagat	tatcgtgttt	attcgacgtt	ttgagcgaag	agttacgtgt	4140
gtttacgtga	cgatggagat	aggaggatta	gggttttggt	tggttttttt	tttgagtttt	4200
tattgtatatt	agttttgggg	tttgggtttt	cgcggttat	tattttttta	tttgggtttt	4260
tgcgtagtta	agcgtagttt	cgtacgttta	ttttttacgt	tagtttttgt	agcgagagtt	4320
tggtatgttt	tttttagggag	atgaattttt	tggtgttttt	gaggaagcgg	cgttcggtgt	4380
gtttggagtt	ttagaggttt	gggggtatta	gtcggcgtag	gtaggttcgt	acgaagtcgt	4440
atattttgta	gggggttgtg	tggtggcgga	tggttagtat	taggcgacgg	gggtttgtgt	4500
tttttttttc	gggggtcgtt	atagagtttt	gggggttttt	tcgggtatag	atatcgggtg	4560
ttgggggtgat	cgtagttcgt	agcgggtagt	gcgttttgag	gagtatttcg	taggggtatt	4620
gcgcgtgggt	tttaagtagt	tttagaaata	ggggtcgtat	ttgttagtag	cgttggggta	4680
ggcggggtaa	tttgccgggga	gtttttggta	tttaggggtt	ggaatttaga	aagatgggtt	4740
ttacgagttt	tcgagcgtta	gttaggttgg	gttttagaga	gttgagtagg	aaggagggtc	4800
gtagttgttt	tttgtcgttt	gaggagtaga	ggaagtgttt	ggtttcggcg	tatatcgggg	4860
gataaggcgt	gttttaggga	cgtggtggtc	gcgatgtgga	tggggggttc	gcgtgggtgt	4920
ggcgggttac	ggatgggtgg	gagtggcgcg	tgtagagag	cgtatttttt	aaagaggtgg	4980
tttttttcggc	gggttttggt	ggtgatatta	tatagaaatt	acggttattc	ggtttacgcg	5040
ttttgttcgg	gtgggttttag	gattttttgt	taacgggcgt	tcgtttcggg	ttaggggtag	5100
cgttacgttt	gggttttttg	ggtaacggta	gatttcgggt	ggtattgttt	tcgcgttttt	5160
tcgtattcgg	gggttggtagg	tttaggggga	tttcgggttt	tttgacgtta	tggttttagg	5220
ttcgttcgta	tttttagacgt	tttcgggggt	tattagcgtg	tggcgggggt	cgggtttgag	5280
tggtagcgtc	gagttgggat	agcggcgggt	cgtatatatt	gtaggcgtag	ttgggagtta	5340
ttagtataaa	gagcgcgtag	cgtgttagta	ggtgaattag	tacgtcgtcg	tttacgcggc	5400
gtagtagtag	tttttacgtt	tcgttttttc	gtagtgcgtc	ggttatcgtg	ttgggtagg	5460
agttgcgtac	gttgggtggtg	aagggttcgg	gggggttttc	gcgggtttcg	tttagtagcg	5520
cgaagtcgaa	ggttaggtacg	tttttcgcgt	cgcgttcgta	tagtttttgt	agttatcggg	5580
ttattagttt	tttttaggtag	gatattttcg	ggggaagcgt	tttgagtcgt	ttgcgttggt	5640
tttcgtatgt	cgttggtttt	tttcggtcgt	ttttaatttt	agtcggacgt	cgttttcggg	5700
gaggtttatt	tggcgggaagg	agggggcggc	ggggggcggt	cgtgcgtttt	agggtagcta	5760
tattaggtat	tgggttatta	gcgcgcggaa	agtcgtcggg	ttttcgcgtt	gtattagtcg	5820
ttagttttgg	ggttttaggc	gtcgtacgaa	cgtggttagc	ggtagtattt	cgcggtagtg	5880

gttgccgtagt	agggagcgt	cggttcggta	gcggggagcg	cgcggtatcg	cggggggtggt	5940
cgggggttagg	gttttttacg	tgcgtagtag	gacgtagcgt	tgtttgaaat	tcgcgtcgcg	6000
aggagagggc	ggggtcgcgg	aaaggaaggg	gaggggttgg	gaggggttcgg	aggggggttgg	6060
gtcggggatt	cgggaggggt	cgggacgggg	cgggggttcgc	gcggaggagg	cggagttgga	6120
aggtgaaggg	gtaggacggg	tgttcggggt	tttagttttt	tcgttacgtg	ggaagcgcgg	6180
ttttgggctg	ttgtgttcgc	gaattttattg	ggagttcggg	ttggtttcga	tagcgtagtt	6240
gtttcggggc	gattcggggg	tttgggtcgc	gttttttcgt	tcgcgcgtcg	ttcgcggtttt	6300
tagggtgtag	ggacgttagc	gaggggtttta	gcggagagag	gtcgaatcgg	tttaggttgt	6360
ggggtaattc	gagggagggg	ttatgatgtg	gaggttttgg	gaataggtgc	gtgcggcgat	6420
tttttggtcg	ttggtttgat	tcggagattt	aggggtgttt	ttaggttcgg	acgcggggcg	6480
tcgggtttcg	ggtattacga	atgtcggacg	tgaaggggag	gacggaggcg	cgtagacgcg	6540
gttggggacg	aattcagaga	cgtattgttt	tttggacggg	tacgcgggat	tttccggagt	6600
gtttttttgt	aataattttt	cgcgattttg	gttttttgat	ataggttcgt	tatttttttt	6660
tgtaggtttt	taggcggcga	gggggttttta	ttatgagtaa	attattttta	atttggtta	6720
tatttatcgg	ggcggtttcg	tcgagaaagg	gtgggaaatg	gagttaggcg	ttttgtttgg	6780
tcgcgtatcg	ggcgttttat	attagttata	acgggttttg	ttttgggttt	cggatattttg	6840
tttggtagat	gaggttaata	tttggttata	tttcggttcg	ataggggtga	gggtaatttc	6900
gggggttagg	tatttggttt	taagtttcgg	attgtagagt	taggaggttc	gattttttagt	6960
ttagtagtag	aagttatacg	gttattgggt	tttttttagt	ttgggggttc	ggataaatcg	7020
taggatagtt	gaggattttt	taggaattta	gatttcgggt	tgtttaagtt	tggatttaag	7080
gggcgagaaa	tttttggggt	tttcgaggtt	ttgtagggat	gttgtagttg	aggtcggtaa	7140
atattgaaat	gttaataaac	gtaattttta	atgtaatttt	ttttattttt	agaaattgtc	7200
ggaggaaatt	gtttttattta	tggagttagt	atttgaatag	gtttcgtatt	ttttttgggt	7260
tgttacgttc	gttggaggtt	agtttcggtt	tgtaaatatt	taggattata	ggtcgttttt	7320
ttagaaattt	tttttagtgat	ttttaagttt	ttttaaagg	ttgtgtttgt	gaattgtttt	7380
tgttattagg	gtaaaggggc	ggtttgga	atttgtttta	ataaaagtta	agttgtagtt	7440
tataattggt	ttttgtagag	aagttataat	agaaaatata	attttaaaa	agggaaagaga	7500
agaaatggaa	gtagaagatt	atgttggagt	aattaatatt	atgtgtatgg	cgaggaaacg	7560
tttttcggta	tttaatgaag	atcgttgata	tttagaagat	atttttagtat	tatgggtgta	7620
gttagtgtgt	ttttgaaaag	ttgatgatgt	tttagttatt	atagtgtaaa	atattaagag	7680
tgttttaata	ataataaaaa	aattttatta	ttggtttaaa	atattataat	atttgagtgg	7740
ggtgagtttt	ttatttttaga	tttagatgtt	tttaaataga	gtaaattttg	agttgggtat	7800
ggtggtttat	atttgttaatt	ttagtatttt	aggaggtaga	ggtaggtgga	ttatttgagg	7860
ttagaagttc	gagattagtt	tgggttaatat	ggtgaatttt	attttttatt	tcgtttttat	7920
taaaaaata						7928

<210> 33

<211> 7928

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 33

tatttttagt	agagacgggg	gtgggggtgg	ggtttattat	gttggttagg	ttggtttcga	60
atttttgatt	ttagatgatt	tatttgtttt	tgttttttta	agtgttgga	ttataggtgt	120
gagttattat	gtttagttta	gaattttatt	tgtttagaaa	tatttggttt	tgaggttagga	180
agttttattt	atttaagtgt	tggtgtgttt	taagttaatg	atagaatttt	tttattgttg	240
ttagaatatt	tttgatgttt	tataattgtg	tgattaagat	attattagtt	ttttaaagat	300
atattaattg	tattttataat	attgggggtgt	tttttggtta	ttagcgattt	ttattgaatg	360
tcgggagggc	tttttttcgt	atgtatatgg	tgtttaattat	tttagtataa	ttttttgttt	420
ttattttttt	tttttttttt	tttaaaattg	tgtttttttt	gttggttttt	ttgtagagaa	480
ttagtgtaa	ttataattta	atttttggtt	gaataaattt	tttaaatcgt	ttttttgttt	540
tagtggtaga	gataatttat	aaatatagtt	ttttaaaaag	gtttagggat	tattaagggg	600
atttttagaa	gagcgatttg	taatttttaag	tattttataag	acgaggttaa	tttttagcga	660
gcgtgatagt	ttaggagggg	tcgaggtttt	gttttaaatgt	tagttttata	aataaagtaa	720
tttttttcgg	tagtttttga	aagtaggaaa	ggttatatatt	aagggttcgt	ttgttagtat	780
tttagtggtt	gtcgatttta	gttatagtat	ttttgtaagg	tttcggggaga	tttagaagtt	840
tttcgttttt	tagatttaaa	tttgagtaat	tcggagtttg	gattttttggg	aagttttttag	900
ttggttttcg	gttgtgtcgg	ggttttaggt	ttggagggga	ttagtggtcg	tgtggttttt	960
attgttgggt	tggaagtcgg	gttttttagt	ttttaggttc	gaggtttgga	gttaggttgt	1020

tggatttcga	ggttgttttt	tattttgtgc	gggcgggatg	tgattagatg	ttggttttat	1080
ttgttagata	gagtgtcggg	gtttagggtt	aaggtcgttg	tggttggtgt	gaggcgttcg	1140
gtgcgcgggt	agtaggagcg	tttgggttta	ttttttat	tttttcgacg	ggatcgtttc	1200
ggtgggtgat	taatagattt	ggggtggttt	gtttatggtg	gggatttttc	gtcgtttgag	1260
aatttgtaaa	gagaaatgac	gggtttgtgt	taaggagttt	aagtcgcggg	gaagtgttgt	1320
agggaggtat	ttcgggaggt	ttcgcgtgtt	cgtttaggga	gtaatgcgtt	ttcgggttcg	1380
tttttagtcg	cgtttacgcg	ttttcgtttt	tttttttacg	ttcggtat	gtgggttcg	1440
gagttcgacg	tttcgcgttc	ggatttgag	gtagttttgg	gttttcggat	taggttagcg	1500
gttaaagggt	cgtcgtacgt	atttgttttt	agggttttta	tattatggtt	tttttttcgg	1560
gttattttat	agtttaggtc	gattcgattt	tttttcgttg	gggttttcgt	tggcgttttt	1620
gtattttggg	agcgcgagcg	gcgcgcgggc	ggggaagcgc	ggtttagatt	ttcgggttcg	1680
ttcggagtag	ttgcgttgtc	gggttaggt	cgggttttta	gtggattcgc	gggtatagac	1740
gtttaggatc	gcgtttttta	cgtggcggag	ggattgggga	ttcgggtatt	cgttttggtt	1800
ttttattttt	tagtttcgtt	tttttcgcgc	ggatttcgtt	tcgtttcgtat	ttttttcggg	1860
ttttcggttt	agtttttttc	gggttttttt	agtttttttt	tttttttttc	gcgggttcgt	1920
ttttttttcg	cggcgcgagt	tttaggtagc	gttgcgtttt	gttgcgtacg	tgggaagt	1980
tggtttcggg	tatttttcgcg	atgtcgcgcg	tttttcgttg	tcgagtcgtg	cgttttttgt	2040
tgcgtagtta	ttatcgcgag	gtgttgtcgt	tggttacgtt	cgtgcggcgt	ttggggtttt	2100
agggttggcg	gttgggttag	cgcggggatt	cggcgggttt	tcgcgcgttg	gtgggttagt	2160
gtttggtgtg	cgtgttttgg	gacgtacggt	cgtttttcgt	cgtttttttt	tttcgttagg	2220
tgggtttttt	cggggtcggc	gttcggttgg	ggttgagggc	ggtcgggggg	aattagcgat	2280
atgcggagag	tagcgtaggc	gatttagggc	gttttttttcg	taggtgtttt	gtttgaagga	2340
gttgggtggt	cagagtgtgt	agaggttgtg	cgagcgcggc	gcgaagaacg	tgttggtttt	2400
cggtttcgcg	ttgttgagcg	gggttcgcgcg	gggttttttc	gaggttttta	ttattagcgt	2460
gcgtagtatt	ttgtttaata	cggtagtcga	cgtattgcgg	gggagcgggg	cgtgggggtt	2520
gttggtgcgt	cgcgtgggcg	acgacgtgtt	ggtttatattg	ttggtacgtt	gcgcgttttt	2580
tgtgttggtg	gttttttagt	gcgtttatta	ggtgtgcggg	tcgtcgttgt	attagttcgg	2640
cgttgttatt	taggttcgtt	tttcgttata	cgttagtgga	tttcgaaggc	gtttgggatg	2700
cgaacgggtt	tggattata	gcgttaggga	ggtcgggggt	tttttgggtt	tgttagtttc	2760
gggtgcgagg	aggcgcgggg	gtagtgttag	tcgaagtttg	tcgttggtta	agagggttag	2820
gcgtggcggt	gtttttgagt	cggagcggac	gttcgttggg	taggggtttt	gggtttattc	2880
gggtaggacg	cgtggatcga	gtgatcgtgg	tttttgtgtg	gtgttatttg	ttagattcgt	2940
cgaagaagtt	atttttttgg	aggggtgcgt	ttttggtacg	cgttattttt	atttattcgt	3000
gggtcgttag	tattacgcgcg	gttttttatt	tatatcgcgcg	ttattacgtt	tttgggatac	3060
gttttggttt	tcgggtgtacg	tcgagattaa	gtattttttt	tatttttttag	gcgataagga	3120
gtagttgcgcg	tttttttttt	tatttagttt	tttgagggtt	agtttgattg	gcgttcggag	3180
gttcgtggag	attatttttt	tgggttttag	gttttggtatg	ttagggtatt	ttcgtagggt	3240
gtttcgtttg	tttttagcgtt	attggtaaat	gcgggtttttg	tttttggagt	tgtttgggaa	3300
ttacgcgttag	tgtttttacg	gggtgttttt	taagacgtat	tgttcgttgc	gagttgcggt	3360
tatttttagta	gtcgggtgtt	gtgttcggga	gaagttttag	ggttttgtgg	cggtttttoga	3420
ggaggaggat	atagattttc	gtcgtttggt	gtagttgttt	cgttagtata	gtagtttttg	3480
gtaggtgtac	ggtttcgtgc	gggtttgttt	gcgtcgggtt	gtgttttttag	gtttttgggg	3540
ttttaggat	aacgaacgtc	gttttttttag	gaatattaag	aagtttattt	ttttggggaa	3600
gtatgttaag	ttttcgttgt	aggagttgac	gtggaagatg	agcgtgcggg	attgcgtttg	3660
gttgcgtagg	agtttaggtg	aggaggtggt	ggtcgtcgag	ggtttaggtt	ttagagttga	3720
atgtagtagg	ggtttagaaa	agggggtagg	tagagttttg	gtttttttgt	ttttatcgtt	3780
acgtgggtat	acgtgggttt	tcgttttagga	cgtcagagtgg	atacgggtgat	ttttgttttt	3840
gttttttttt	ttgttttagtt	tgtataaaatt	tacgaggttt	atttttacgt	tttgatggat	3900
acgcgggttt	taggcgtcga	ggttagagta	gtgaatagag	gaggttgggc	gcgaggttgg	3960
agtgcgggtt	tcggtaaatg	ggagaagtgt	ttggaagtat	agacgttttg	gcgaggttgt	4020
ttgtaggtta	tttataaatt	ttttcgtaat	tttaagggtg	ggaatgagag	gtggggacga	4080
gaattttttt	tttttggggg	tgggaggtaa	gggttttgta	ggtgtacgtg	gttagttaat	4140
atgtaggttt	gtgtttaaga	tttaatttgt	tgttgacggg	taggtgcggg	ggtttacgtc	4200
ggtaatttta	gtattttggg	aagttgaggt	aggtggatta	tttgaggtta	ggagtttgag	4260
attagtttga	ttaatatggt	gaaattttat	ttgtattaaa	aatataaaaa	ttagttgggt	4320
atggtgggtg	gtgtttgtaa	tttttagttat	ttgggaggtt	gaggtaggag	aattatttga	4380
atttaggag	cggaggttgt	agtgaattga	gatttgttta	ttgtatttta	gtttgggcga	4440
taagagtga	attttgtttt	taaaaaaaaa	aagttgtcgt	tgattgttgt	aggatagggt	4500
agagggaggg	agataagatt	gttttttagt	atagattttg	gttttatttt	taggtatgaa	4560
gaggggtata	tgggagtaga	ggatagtaga	tggttttatt	tgttgaggaa	gggatagtgt	4620
ttgtgggtgt	ttaggggatg	gtgttgttgg	gttttgtcgt	gtttttattt	tgtttttttg	4680
gatttgatgt	tgaggaattt	tcgttttagt	ttttttttgg	tttttagtgt	ttttagggtt	4740
tatcgtggta	gttagaagaa	gtttcgtatt	tatttttttt	ttataaattt	ttaagatatg	4800

taagat	ttttc	ggttatgtag	ataaggaggg	tgattttttt	ggggtttttt	tttttttttt	4860
ttttttttta	tggtggtaaa	agttatataa	tatgagattg	gtatttttta	tatcgttttt		4920
tgtgtatagt	gtagaattgt	taattcggcg	gtgtttatag	taggttggtt	gaaatgttgc		4980
gttttgcgtg	attggaagtt	tttatttato	gaacggtagt	tgttttatat	ttgttgcggg		5040
ttaggtggat	tacgtcgagt	tagataagcg	ttatgtaatt	tagttttggt	ttttgtgttt		5100
tagttttttt	cggtgaggag	agtttgagtt	ttttgattag	gattttgttt	gttattgttg		5160
ttttttgatt	ttagatgagg	ttataatttg	tttttggttt	atgtaggagg	tgaggcggtg		5220
ttttcgggtg	tttttggtac	gtgtagggtg	agtgaggcgt	tgtttttagg	tgtttttggt		5280
acgtgtaggg	tgagtgaggc	gcgggttttcg	gggtgtttttg	tttcgtgtag	cgtgattgag		5340
gtgtgggtttt	cgggtgtttt	tgtttcgtgt	aggggtgagt	aggtattggt	ttcgggtgtt		5400
tttgttacgt	gtagggtgag	tgaggcgcg	ttttcgggtg	tttttggtac	gtgtagggtg		5460
agtgtaggat	tgttttcggg	tggtttttttt	aggtgtaggg	tgagttaggc	gtcgttttcg		5520
gggtgtttttg	ttacgtgtag	gggtgagtag	gcgtgggtttt	cgggtgtttt	tgtttcgtgt		5580
aggggtgagt	agggcgttgt	ttcgggtgtt	tttggtacgt	gtagggtgag	tgaggcgcg		5640
ttttcgggtg	tttttggtac	gtgtagggtg	agtgtaggat	cgtttttggg	tgtttttttt		5700
aggtgtaggg	tgagttaggc	gttgttttcg	gggtgtttttt	ttagggtgtag	gggtgagtag		5760
gcgcgggtttt	aggtgtttttt	gttacgtgta	gggtgagtag	gggtatcggtt	ttgggtgttt		5820
tttttaggta	taggggtgagt	gaggtattgt	tttcgggtgt	ttttgttacg	tgtaggggtg		5880
gtgaggcgcg	gttttttaggt	gtttttgtta	cgtgtagggt	gagtgaggta	ttgttttcgg		5940
gtgtttttgt	ttcgtgtagg	gtgagtgagg	cgcggtttttt	aggtgtttttt	gttttcgtgta		6000
gggtgagtag	ggcgtcggtt	tcgggtgttt	ttgttacgtg	taggggtgagt	gaggtacggt		6060
tttcgggtgt	ttttgttacg	tgtaggggtg	gtgaggcgcg	gttttcgggt	gtttttgtta		6120
cgtgtagggt	gagtgaggcg	cgggttttcg	gtgtttttgt	tacgtgtagg	gtgagtgagg		6180
cgcggttttc	gggtgtttttt	gttacgtgta	gggtgagtag	ggcgcggttt	tcgggtgttt		6240
ttgttacgtg	taggggtgagt	gaggcgcggt	tttcgggtgt	ttttgttacg	tgtaggggtg		6300
gtgaggtagc	gttttcgggt	gtttttgttt	cgtgtagggt	gagtgaggta	ttgttttcgg		6360
gtgtttttgt	tacgttttagg	gtgagtgagg	cgcggttttc	gggtgttttt	gttacgtgta		6420
gggtgagtag	gggtatcggtt	tcgggtgttt	ttgttacgtg	taggggtgagt	gaggcgttgt		6480
tttcgggtgt	ttttgttacg	tgtaggggtg	ttgacgcgag	gttttcgggt	gtttttgtta		6540
cgtgtagggt	gagtgaggcg	tcgttttcgc	gtgtttttgt	tacgtgtagg	gtgagtgagg		6600
cgctcgttttc	gggtgtttttt	gttacgtgta	gggtgagtag	gggtgtcgtt	tcgggtgttt		6660
ttgttacgtg	taggggtgagt	gaggcgtcgt	tttcgggtgt	ttttgttacg	tttaggggtg		6720
gtgaggtagc	gttttcgggt	gtttttgtta	cgtgtagggt	gagtgaggcg	cgggttttcg		6780
gtgttattgt	tacgtgtagg	gtgagtgagg	tattgttttc	gggtgttttt	gttacgtgta		6840
gggtgagtag	ggcgcggttt	tcgggtgttt	ttgttacgtg	taggggtgagt	gaggcgcggt		6900
tttcgggtgt	ttttgttacg	tgtaggggtg	gtgaggcgcg	gttttcgggt	gtttttgtta		6960
cgtgtagggt	gagtgaggcg	cgggttttcg	gtgtttttgt	tacgtgtagg	gtgagtgagg		7020
cgcggttttc	gggtgtttttt	gttacgtgta	gggtgagtag	gggtacgggtt	tcgggtgttt		7080
ttgttacgtg	taggggtgagt	gaggcgcggt	tttcgggtgt	ttttgttatt	tgtaggggtg		7140
gtgaggtagt	gttttcgggt	gtttttgtta	cgtttagggt	gagtgaggcg	cgggttttcg		7200
gtgtttttgt	tacgtgtagg	gtgaatgagg	tattgttttc	gggtgttttt	gttacgtgta		7260
gggtgagtag	ggcgtcggtt	tcgggtgttt	ttgttacgtg	taggggtgatt	gacgcgagggt		7320
tttcgggtgt	ttttgttacg	tgtaggggtg	gtgaggcgct	gttttcgcgt	gtttttgtta		7380
cgtgtagggt	gagtgaggcg	tcgttttcg	gtgtttttgt	tacgtgtagg	gtgagtgagg		7440
cgctcgttttc	gggtgtttttt	gttacgtgta	gggtgagtag	ggcgtcggtt	tcgggtgttt		7500
ttgttacgtg	taggggtgagt	gaggcgtcgt	tttcgggtgt	ttttgttacg	tgtaggggtg		7560
gtgaggcgct	gttttcgggt	gtttttgtta	cgtgtagggt	gagtgagggt	tcgttttcg		7620
gtgtttttgt	tacgtgtagg	gtgagtgagg	tattgttttc	gggtgttttt	gttacgtgta		7680
gggtgagtag	ggcgtcggtt	ttgggtgttt	tttttaggtg	taggggtgagt	gaggcgttat		7740
tttcgggtgt	ttttgttacg	tgtaggggtg	gtgaggcgct	gttttcgggt	gtttttgtta		7800
cgtgtagggt	gagtgagttg	cgggttttcg	gtgttttttt	taggtgtagg	gtgagtgagg		7860
cgttgttttt	gggtgtttttt	gtttcgtgta	gggtgagtag	gggtttgttt	ttagggtgttt		7920
ttggcggt							7928

<210> 34

<211> 3190

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 34



aggagtttaa	gattagtttg	gttaatatga	tgaaattttg	tttttattaa	aaatataaaa	60
attagttagt	tgtggtggtg	tatgtttgta	attttagtta	tttaggaggt	tgatagagga	120
gaattgtttg	aatttaagag	gtgaagggtg	tagtgagtta	agaatatatt	attgtatttt	180
agtttggttg	atagagtagg	attttgtttt	aaaaaaaaaa	gagttggtta	gtgttaaatg	240
tttagtatag	agattggtat	agtaattttt	aatgtttagt	atttattggt	attatttttt	300
tttttttttt	ttttttgaga	tagagttttg	ttttgttggt	taggttggag	tatagtgggtg	360
tgattttggt	ttattgtaag	ttttattttt	taggtttatg	ttattttttt	gttttagttt	420
tttgagtagt	tgggattata	ggtgtttatt	attatgtttg	gttaattttt	tgtattttta	480
gtagagatgg	ggttttattg	gtttagttag	gatggtttta	attttttgat	tttgtgattt	540
gtttgttttg	gttttttaaa	gtgttgggat	tatagggtgtg	agttattatg	tttggtttta	600
ttgttattat	ttttattttt	tatttttgta	tagagtattt	atggtttaag	aaatatttgt	660
tattttaaatt	gtatgggagt	tttataatag	tatagggaga	tatttttgat	tattattttt	720
attagggagg	tggagaaaatt	gaggttttgg	gaggtgggtt	tgatttaggg	aattaatttg	780
ttgattttatt	aattttatgaa	gttttatagt	taaaaaagat	tagattaaaa	aatgagaatt	840
tagtaaaggg	gttgaggtag	gaggattggt	tgagttttaga	aatttgagat	tagttttggt	900
aatatagtga	gatttttttt	ttagaaaaat	tttttaaaaa	attaggttgt	ttgaggtaga	960
gtgtagtggt	ttatgtttgt	aatttaatat	tttaggaggt	tgaagagggg	ggattatttg	1020
aggttaggag	tttttagatta	gtttggttaa	tatggtgaaa	ttttgtttgt	attaaaaata	1080
taaaattagt	tggtgtgggtg	gtatatgttt	gtagtttttag	ttatttaata	ggttgagata	1140
ggagagtttt	ttgaatttgg	taggtggagg	ttgtagtgag	ttgagattgt	gttattgtat	1200
tttagtttgg	gtaagataga	gtgagatttt	gttttaaaaa	atataaataa	aataaataaa	1260
taaaaaaatta	ggttggttagt	ttagtgggtt	atggtttata	tttgaaattt	tagtattttg	1320
ggaggttaag	gtaggaggat	tgtttttagtt	taggagtttg	agattagggt	gggtaatata	1380
gggagatata	gtgtttttat	tgtttttggt	tgttttgatt	tgttttttta	taaaaaggta	1440
aaagaaaaaa	aaattagttt	ggtgtgggtg	tggtattttg	tatttttagt	tattagagag	1500
gttgggggtta	gaggattggt	tgagtttagg	agtttgaggt	tgtagttagt	tgtgattgta	1560
ttattgtatt	ttagtttggg	tgaaagagtg	agattttatt	tttaaaatga	ataaataaaa	1620
aatttttaaaa	aataaaaagaa	tttagtttaag	tgtaaaagtt	ttttttgatt	ttaggtttta	1680
gtgagttatt	ggtgggggtg	ggatttgaat	ttagtggaa	tagaattgtg	taggttttat	1740
aatttatttta	gatttttagta	attttaggtt	agaggggtat	tgtgtttatg	tgaggttggg	1800
tgggtgggtt	gttagttttg	ttttggggag	gggtttgtgt	tgttgattgg	ttgtgggttg	1860
taggtgaatt	tttagttaat	tagtggtatg	gggggtggtg	tttttggggt	ttatttgggt	1920
gtagttatgt	attttttttt	agtgggtgtg	gaattgtaaa	gtatttgtga	gtttgtgtaa	1980
gttagtttag	attttagttt	gttttagttt	ggtttgattt	gattgtattt	ggtgtttgtt	2040
tttggttggg	gtttttgggt	agttatgggt	ttttggagtt	gtagtttttt	ggtgttgttg	2100
ttgttgttgt	aggtattttg	gattttttga	tttgtgaggg	atgtatttgg	gttgtaagtt	2160
ttgtgtttta	gttttgtgtt	tttttttttt	ttgttgttat	tgtttttttt	tttttaagaa	2220
agttttgggt	ttgaggagtg	gagtgggttg	gaagttttgt	gtgttttggg	tttttttagtg	2280
atgggagtg	ggggtgggtg	gtgaggggtg	agtgtgggtt	ttttgttttt	tttagtgtag	2340
attgaggtgg	gggtgtttgg	ttgtggagtt	tgtgggggtg	gtttgtgtgg	gtgggtgggg	2400
tgtgaagtgg	ggtgtagggg	gtgggggtgtg	gagaaggggt	gttttgggtg	aagttgaggg	2460
ggagttagga	gttggtggga	tgattttttga	gggaaggaga	gggtattttg	tagaaaataaa	2520
ggtatttggt	atgttaagaa	aggttgtaaa	taggagtgag	ggttttgggg	ataagaaagt	2580
gaggttgag	gaggtgggag	tgttttttgt	tttgaggagt	ggtgtatttt	tgggttaagg	2640
aaagtgggg	attggagaat	aaagatatatt	ttaataaaaat	gagaaaggag	attgaaaggg	2700
aatggtgggt	taggtttttga	gggggtgatt	tggtgggttt	tttttgggg	tttttggggg	2760
tttggtgggt	gtaggtttttg	gggtggggga	gggtgatgtt	gttggtttgt	tgttttgggg	2820
ttgtgggttg	gggttttttt	ttaattttga	tgttgggagt	gagggagggg	tgggtgttgt	2880
ggttttgggtg	agtaggaggg	aattttttga	gttatttggg	tttatttatt	ttttttttat	2940
tttaggtttt	tttttgggtt	tgtaggaggt	tggagttttg	ttattttggt	tttgatgttg	3000
agagttatat	gtttatgggtg	ttttgggtgt	atttggagag	aggttgtgtt	ttgggtagag	3060
gtgaggggtg	gttggtgggtg	tttttgggtg	gagtagggag	gggttggaaa	gggggtgaga	3120
aattgtattt	ttatattttt	gggttgtaat	gggtaagttt	tttttttggg	ttaaatgata	3180
ttttttggaa						3190

<210> 35

<211> 3190

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 35

ttttaagggg	tggtggttga	gttaaggagg	gagtttggtt	attgtaattt	aggggtgtgg	60
gagtgttaatt	ttttgggttt	tttttaattt	ttttttattt	tgtttaggga	tattggtagt	120
gtgtttttat	ttttggttag	gatgtgggtt	ttttttagg	ggtgttgagg	tattgtgaat	180
gtgtagtttt	tggtgttaaa	gttaggggtg	taggggtttg	gtttttggta	gagttaagag	240
gagatttggtg	gtgggggaaa	ggtagatgga	attgggtgat	ttggagggtt	ttttttgtt	300
tattgaaatt	aatagtgttg	tttttttttt	gtttttggtg	ttgggattgg	gggaggattt	360
tagtttgtag	ttttgggatg	ggtgggtagt	gatgttattt	ttttttattt	tgaaatttat	420
ggttggttag	tttttaggaa	tttttgggag	ggggttggtg	agttattttt	ttaagattta	480
gtttattggt	tttttttagt	tttttttttt	attttattgg	agatgttttt	atttttttagt	540
attttattttt	tttttagattg	ggaatgtatt	attttttaga	gtgaggggtg	ttttttattt	600
ttttgattttt	atttttttat	ttttgggatt	ttttttttta	tttatgattt	tttttggtat	660
ggtaggtgtt	ttttttttta	tggatgtttt	tttttttttt	ttgaagattg	tttttatgat	720
ttttgggttt	tttttgattt	gtattagggt	attttttttt	tatatatttt	tttttatatt	780
ttgttttatg	tttttattgt	ttgtgtgagt	ttttttgtg	gattttgtgg	ttagatgttt	840
ttgttttggt	ttgtgttgga	gggggttagga	aagttgtggt	tggtttttat	tattttattt	900
ttattttttat	tattgggggg	tttgaggtgt	gtgaggtttt	taggttggtt	tggttttttag	960
gatttgaatt	tttttggaa	aagggaaagt	gtgatgatgg	gagaggaagg	ggtgtagggg	1020
tgggggtgtg	agtttgtggt	ttgaatgtgt	tttttgtaag	ttaggggatt	tgggggtattt	1080
gtagtagtag	tagtagtggt	gagaggttgt	ggtttttaagg	gtttatgggt	ggttggggat	1140
gttgagttag	ggttaggtgt	gggtgtgggt	gggttgggtt	gggttggagt	gggttggagt	1200
ttgaattgat	ttttgtaagt	ttataggtgt	tttgtagttt	tgatgttatt	gagagggggg	1260
gtgtggttgt	agtttaggtga	gttttggagg	tattgttttt	tgtattgttg	attgggttgag	1320
ggttttattt	ttgggttatag	ttaattagta	gtgtggattt	ttttttagg	tggagttgat	1380
ggtttgttta	tttgggtttt	tatagatgtg	gtgatttttt	agtttggagt	tgttagggtt	1440
taggtgggtt	atgggatttg	tatgggtttt	attttattgg	gtttgaattt	tagttttgtt	1500
gggtgggttat	taagatttgg	gattagaaa	ggttttttata	tttggttgag	ttttttgtt	1560
ttttgggatt	ttttgtttgt	ttgttttgg	gatgggggtt	tattttttta	tttaagttgg	1620
agtgtagtgg	tgtgattata	gtttattgta	gttttgaatt	tttgggttta	agtgggtttt	1680
tgggttttagt	tttttttagta	gttgggagta	taggtgtata	ttattatgtt	agggttaattt	1740
tttttttttt	tgtttttttg	tagagagata	agttgggggtg	gataggggta	gtgggggtgt	1800
tgtgtttttt	tgtattgttt	agtttgggtt	tgaatttttt	ggttgaagtg	atttttttgt	1860
tttgggtttt	taaagtgtta	ggatttttag	tgtgagttat	gagttattga	gttagtagtt	1920
taattttttg	tttgtttgtt	ttgtttgtat	tttttgagat	ggagttttgt	tttgttttgt	1980
ttaggttgga	gtgtagtgg	atgatttttg	ttttattgtaa	tttttgtttg	ttgggtttta	2040
gagatttttt	tgtttttagt	tattgagtag	ttgggattat	agggtgtgtg	tatttatattg	2100
gttaattttg	tattttttagt	atagatgggg	ttttattatg	ttgggttaggt	tgggttgga	2160
tttttgattt	taggtgattt	atttttttta	gttttttgaa	gtgttggtt	ataggtgtga	2220
gttattgtat	tttgttttga	gtgggtttaat	tttttaaaaa	atttttttag	agaggggatt	2280
ttattatgtt	gttgagggtt	atttttaaatt	tttgaattta	ggtgattttt	ttgttttagt	2340
ttttttattg	agtttttatt	ttttaattta	gtttttttta	attgtagagt	tttatgggtt	2400
agtgagttag	taaattgatt	ttttagggtta	ggattatttt	ttaaagtttt	agttttttta	2460
tttttttaatt	gggaataatg	attagaaatg	tttttttatg	ttgttgtggg	attttttatat	2520
aattaaaaatg	ataaatgttt	tttgagttat	aaatgttttg	tatagaagtg	aggggtaaaa	2580
atagtaataa	taggggttag	tatgggtggt	tatgtttgta	atttttagtat	tttgggaggt	2640
tgaggtgggt	agattatgag	gttaggagat	tgagattatt	ttgggttaatg	tagtgaaatt	2700
ttgtttttat	taaaaatata	aaaaattagt	taggtgtggt	ggtgggtgtt	tgtagtttta	2760
gttatttggg	aggttgaggt	aggagaatgg	tatgaatttg	ggaggtggag	tttgtagtga	2820
gttgagattg	tgttattgta	ttttagtttg	ggtgatagag	taagattttg	tttttaaaaa	2880
aaaaaaaaaa	aaaaaatagt	aataataggt	gttgatattt	gaagattatt	gtgttagttt	2940
ttgtgttaag	tatttgatat	tgattagttt	tttttttttt	gagatggagt	tttgttttgt	3000
tgtttaggtt	ggagtgtaat	ggtgtgtttt	tggtttattg	taatttttgt	tttttgggtt	3060
taagtgggtt	ttttttatta	gttttttgag	tagttgggat	tataggtatg	tgttattatg	3120
attggttaatt	ttttgtattt	ttagtagaga	taggggttta	ttatgttggt	taggttggtt	3180
ttgaattttt						3190

<210> 36

<211> 2301

<212> DNA

<213> Artificial Sequence



<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 36

gttgtagtt	ttttgtgtaa	ttttattttt	tggaaaagt	gaattagttg	gtattgttta	60
gtgtgatttg	tgaggttgag	ttttaatagt	ttaaagaagt	aaatgggatg	ttatttttgt	120
ggggtttgtt	ttttgtgagg	tgtttatttt	gtatttgta	tgtaaaatga	gggagtgtta	180
ggaaggaatt	tgttttgtaa	agttattggt	tttggttatt	agtttttatt	taatgttttt	240
gtgatgttgt	tgttgattta	tttgggaagt	tgggttggtg	gtgaggtaga	gttttttttt	300
aaagtttggt	ttttatggaa	aatatgttta	gtgtagttgt	gtgtatgaat	gaaaatgttg	360
ttgggtgttt	ttagttggat	aaaatgtagt	tgagaatttt	gtttgttttg	tgtgtttttt	420
tgtttttagt	agggagagg	ggttggtggg	tgtgttttgt	gttttgtttt	tgtatttgga	480
ttgttttgta	tgggtagggt	gaggggggtt	ttgggggggt	gggggtttttg	gttgtggtgg	540
tgaagataga	ttgggggtttg	gtagggagggt	tattttgagt	ttagagattt	taggtatttt	600
ttatatatag	gtttttattt	tgggtgtgtg	gtgtgtgtgt	gtgtgtgtgt	gtgtgtgtgt	660
gtgtgtgtgt	gtatgtttgt	taatgggagg	aggagagagt	tttttagttt	tttttgttag	720
taggggtgat	atttttgttt	atattaagtg	gggtaatttt	ggtttttttt	tttggagggt	780
tgggtgtattg	gagaaagatt	tagtttagagg	tgattttaat	gagttgtggt	tttttttagt	840
ttaatgttta	gtggttgaag	tgttgtttgg	gtttggattg	tgggatgtgg	ggttggagag	900
gttgagtagg	tattattgat	tttttaggggt	gtttgggttt	tttgggtatag	tttgggtggt	960
tggttgaagg	tgttttgggg	tagtagagag	tttttagttt	gttgttgttg	ttgttttaaag	1020
gtgttgggtg	tggttgtatt	tgtattgggg	tttttttgtt	tttagatttt	gggtttgaaa	1080
gggttggagt	gtgttttttg	ttagggtgta	ggtttttagt	ttttgtattt	ttattgttta	1140
gttagttgga	gttttggtta	gattttgggt	tgttgttttt	gttgtttttt	ttgagtgga	1200
gtggagtgtg	gagaaaagtt	taagttttgt	ttatttgggt	tgtagttggt	tgttaatttt	1260
tagagtgtta	tggtgtgagg	gaaggggtatg	ttaattagga	gaggggggtga	gggagatgtg	1320
gtttgtttgt	agttattttt	gtatttttaga	gattttggga	agtttgagtg	taggaaagta	1380
gtgttttgag	gttaggtttg	gggtgttggt	tgttgtgggg	ggtatgtttt	gtgttgttta	1440
ggggtttgtg	gttttgga	gtattttgat	ttagtttttt	attgtttttt	tggtaggtgt	1500
tgggatttgg	agtgaattgg	tagtttgtaa	gtgggtggat	aagagttagg	gtagggtagg	1560
gttgggtaga	gtaaggagg	aaagagatag	ggagtgtttt	aggggttag	gaatgagtg	1620
tgagtttttg	gttggggtag	aggttttaggt	gagagtttgt	gggtgaaagg	taggggaagg	1680
gagttgggtt	tttaggtagg	gattgttttg	gatggggaga	ttggtgtaga	tttttaagg	1740
agattattgt	tagagtaatg	ttgggttttag	attttggaaa	tgggttaata	tttttagaaat	1800
gtagtgtatg	gtgatagtat	taggggagat	ttaatgtttt	ggttgttgag	tttgttttta	1860
agtttttgat	tttttttttg	gatatatagt	tttgattaa	gattgttttag	ttatagtttt	1920
ttttttatta	ggtttttttg	gttgattatt	ttgggggtttt	tatagttttg	agttttgtta	1980
tggattttaa	gtttggttgt	gaattagttt	tttagatgtt	ttgtatttta	gagatttttaa	2040
ggttgtatgt	gtgtatatat	attttaattt	agtaagggtg	tttgaggtat	gttttagata	2100
gaaaggattt	agatagattt	tttttgttat	ttgttagtgg	tattaaattg	ggtaagttgt	2160
ttaatttttt	tgagttttta	agttttttat	tgtaaaataa	tttgttgttt	tttttaggatt	2220
gttgagtggg	taggattgta	tttaatagga	tgttttatgt	aatgtatgtt	agtttgggag	2280
ttgttgggtg	ttgagagtat	t				2301

<210> 37

<211> 2301

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 37

agtgttttta	gatattgata	gttttttagat	tggatatgtat	tgtataggat	attttgttga	60
atgtaatttt	atttatttag	tagtttttagg	aaggtagtag	attattttat	aatggagaat	120
ttggaagttt	aaagagggtta	aataatttgt	ttgggttggt	attattagta	gatggtagga	180
aggatttgtt	tgaatttttt	ttgtttgagg	tatgttttaa	attgttttgt	taaattgggg	240
tatatgtata	tatatatagt	tttgggggtt	ttagggtata	ggatatttgg	aaaattgggt	300
tatagttagg	tttgggattt	atggtaagat	tttaagggtgt	agggatttta	agataattaa	360
ttagaaaagt	ttggtagaaa	aggagttata	attgggtagt	ttttaattgg	gattgtatat	420
tttaagaaaga	agttaggagt	ttgggagtgg	gttttagtagt	tgggtatttg	aatttttttt	480

ggtattatta	tttattattg	tattttttgag	atgttagt	atgttagt	atgttagt	atgttagt	540
atattgtttt	aatagtgggt	tttttttagaa	gtttttttat	gtttttttat	gtttttttat	gtttttttat	600
ttttatttgg	gaattttaatt	ttttttttttt	gtttttttatt	gtttttttatt	gtttttttatt	gtttttttatt	660
ttttatttgg	ttaggaattt	aatattttatt	tttagtattt	tttagtattt	tttagtattt	tttagtattt	720
ttttttttta	ttttgttttg	ttttgttttg	ttttgttttg	ttttgttttg	ttttgttttg	ttttgttttg	780
gtaggtttat	tttaagt	aatgtttgtt	agagaggtga	agagaggtga	agagaggtga	agagaggtga	840
ttttttgaaa	ttataggttt	ttgagtagtg	taggggtgtg	ttttgttagt	ttttgttagt	ttttgttagt	900
tttaggtttg	ttttggagtg	ttgttttttt	gtattttaaat	tttttgaaat	tttttgaaat	tttttgaaat	960
tagaggtgat	tgtaggtgga	ttgtattttt	tttgtttttt	tttttggttg	tttttggttg	tttttggttg	1020
tttttgtgtt	gtggtgtttt	gaggggttaat	aagttagttg	agtttgggtg	agtttgggtg	agtttgggtg	1080
gaattttttt	ttgtgttttg	tttttgttta	gggaaggtag	tagaggtggg	tagaggtggg	tagaggtggg	1140
ttggttggag	tttttagttg	ttggataata	gggtgtgtgg	gggttgggtt	gggttgggtt	gggttgggtt	1200
gtgggggata	gtttttgggt	tttttgggtt	tgggttttgg	gagtaaaagg	gagtaaaagg	gagtaaaagg	1260
gggtgtgggt	gggtgtgggt	tttttgagtg	atagtagtag	ttgggttgag	ttgggttgag	ttgggttgag	1320
gttttgaggt	gttttttagt	gggttagttg	gttgtattag	gggttttggg	gggttttggg	gggttttggg	1380
agttggtggg	gtttgttttg	tttttttagt	tttgtatttt	gtaatttgga	gtaatttgga	gtaatttgga	1440
gttttgggtg	ttgggtgttg	gggttgggaa	aattgtgtgt	tggttggagt	tggttggagt	tggttggagt	1500
gagttttttt	ttaatgtatt	gagttttttg	aggagggaa	taaagtattt	taaagtattt	taaagtattt	1560
tgggtgagaa	gtttgttttt	gttagtaaaa	aaggattggg	agtttttttt	agtttttttt	agtttttttt	1620
aatgaatgta	tatatatata	tatatatata	tatatatata	tatatatata	tatatatata	tatatatata	1680
agagtgggag	tttgtgtgtg	gggggtgttt	aggatttttg	gggttggaa	gggttggaa	gggttggaa	1740
ttgagttttg	atttgttttt	gttgtgtga	ttggaggttt	tgattttttg	tgattttttg	tgattttttg	1800
tattttgttt	gtgttgggtg	atttgaatgt	agaaatggg	tgtagagtgt	tgtagagtgt	tgtagagtgt	1860
tttttttttt	tatttgggat	aggagaatgt	atagaatgag	tggagttttt	tggagttttt	tggagttttt	1920
tggttgatta	gaagtgtttg	gtggtgtttt	tatttatgta	tgtggttgta	tgtggttgta	tgtggttgta	1980
tttttgtggg	agttaggttt	tgaggagagg	ttttgttttg	ttagttagtt	ttagttagtt	ttagttagtt	2040
atagattagt	agtagtatta	tgaaagtatt	gggttagaggt	tgatgattag	tgatgattag	tgatgattag	2100
tttataagat	ggattttttt	ttaatgtttt	tttgttttgt	atggtagata	atggtagata	atggtagata	2160
attttgtgag	gagtgagttt	tgtggagggtg	gtattttatt	tgtttttttg	tgtttttttg	tgtttttttg	2220
gttttagttt	ataaattatg	ttgggtaatg	ttagttgatt	ttattttttt	ttattttttt	ttattttttt	2280
attgtatggg	ggattgggtg	t					2301

<210> 38

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 38

tggatttagt	ttttgggagt	tgtttttgtt	gatttttttt	gttgtgattt	gatttgtggt	60
gattgtgttg	tttttttgg	gttttttttg	ttttttagg	tggtgtgggt	tattatttat	120
gtgtgtattg	taggtttttg	tgtagatgt	tttagatgaa	gttgttatag	agggtgtatt	180
atgtgtgtgt	gggtgggttt	gtgggttgga	agtgggtggt	atgggttagg	attagttggt	240
gtgtgggggt	gtatgtgggt	ttttgtgtga	tggttagtgt	gttggtaggt	tttagttggg	300
tgtgggtttt	tttagtgtgt	tttagtgggt	tttagttttg	tagttttaat	agtttagggt	360
tttttgatat	ggtttgggtg	ggtttgtgtt	ttgttgggtt	tgggtgttag	taagtgtggg	420
ttgggtgggg	ttataggggt	ggtttttgatt	ttagtgtttt	ttttaggatt	tagattgggt	480
gggtgggaagg	agttgaggag	agttgtgtaa	tggaaatttg	gggttaggga	ttgtgggggt	540
tgaagggtgg	gttgggtgtg	tttttgtaga	gttttttttg	tttttgtttt	tttttttttt	600
tttgtttttt	ttttatattt	tatttttggt	gggtataatg	atgggtgatt	taaagtatta	660
tgtggagata	tttgtgtttt	tggaggttag	ttttattgtg	tttagagga	agggttttta	720
tatttgggtt	tgggtttttt	ggtttgggtt	gttgaagtaa	tatatattgt	ttattttatt	780
gggtgggttag	gaagttttga	gtttttattt	gggttgagga	ggagggagat	tggttagtag	840
ttttattgtt	tggtttgttt	tttattgtgg	agattgggtt	tttggtagag	gttggattgt	900
gatttttgagg	tttaggggtg	tattttgggt	ggattttttt	ggtaggggtg	gttgggtttt	960
agtaattgta	gtttttattt	ggttttgtta	ttttgggttg	ttaggatata	agttttttta	1020
tggttttttt	agtgtttgat	ttgtattttt	ttgtaggtag	gtgggtattg	aggatggtaa	1080
tgtatgtggg	ggatgtggga	gtagggttta	gaggtttaag	gttttaggat	atttttattt	1140
gtagtaatat	tattttattt	ggtattgtga	gtagtgttta	gaagtttttg	tattgtagta	1200
agtatagtg	gggtgttttg	gagttattgt	tttagtata	tttagtttgt	agggttttagt	1260

ttattttgggg	gaaagttagg	aaggtttgat	tggtttttga	aggtgggggt	attttattta	1320
tatttatgtt	ttttgtattt	tttttatttt	ttttgttatt	tttataggtt	ttatttttgt	1380
gtttgtagtt	gtaggttttg	ttttgagggg	ttgaatatat	gttggagttg	gtgtttggta	1440
attgtttgtt	atttgttttt	gtttttttgt	tttagttgtt	tttagatttt	tgggatttag	1500
gagagagaag	tggagagtgg	taggaagggt	ttggtaaagt	gggatatagg	ttttgagtag	1560
ttaatTTTTT	agtgtttatt	tgttttaata	ttaggttttt	tttaggaggt	tgggttttag	1620
ttagggttag	atgggttagg	aaattttgta	agtgggttag	gttgggtagt	tggtttagta	1680
gtgtgtttgt	gaggaagggt	tgaagtgtga	aggggtgtta	gtggagggtta	gtgtgatgta	1740
ggtgttggtt	aggggggttaa	ggaaaaggaa	gggggtgggt	tgggttgaga	atgtttgtgg	1800
gggtttatgt	tttattagtt	ggtgtgttat	ttgaggttta	aggattgaaa	agagtattgg	1860
ggttgagggtg	ggtgggtaaa	gataaatagt	agggatgtag	ttggggtagg	atggggaggg	1920
tggatttggg	gttgtggggg	ttgggtgtga	gggagtttga	ttttgagtag	ttgttttttg	1980
gtaaaatttg	tgaggtagta	gtgtgtttga	gttttagggg	ttagtagtag	gttgtatagg	2040
gtgatttata	tttgtttgtt	taattttgtt	agttttttgt	gttttgaggg	ggttatagta	2100
tgttaatggg	tgtttttgaa	ttgtttagt	ttgtttgggg	agaggaatta	gtatattggg	2160
tgtagatgtt	gaattttttt	taagttaggt	agttgtgggg	gttgggagat	tgattattgt	2220
ttgggaatgg	gagaattttg	gttgtaggat	ttgtttaggt	tatagggttg	ttagttttag	2280
agtaggggtga	gttttagtag	tggatatatg	ggtttggttt	gttgtagagt	ttaggtttag	2340
gttaattttg	gttgaggtat	tttggtattt	ttagtgggtt	tggggatagg	gtttgttttt	2400
gtgtgtgtaa	gttgtttttt	tttattaaaa	agatattttg	aagtagtagt	ttgggggtta	2460
ggttggtggg	ggaggatttt	attttttttt	tgttggtttt	a		2501

<210> 39

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 39

tggagttggg	gggaaggagg	taggggtttt	ttttattagt	ttaagtttta	ggttatttgt	60
ttagggtatt	tttttgatag	aggggggtag	tttgtatata	tgaagataaa	ttttgttttt	120
aagtttattg	aggatattag	gatgttttag	ttaagggttg	tttagatttg	agttttgtag	180
taggttaggt	ttatgtgttt	attattgagg	tttattttgt	tttggggtta	gtagttttat	240
agtttggtta	agttttgtag	tttaggtttt	tttattttta	ggtagtggtt	agttttttag	300
tttttatagt	tggtttattt	gaagagaatt	taatgtttgt	atttagtgtg	ttgggttttt	360
tttttaggta	agttgtagta	gtttgagggg	agttgtttgt	atattgtggg	tttttttagag	420
tagtaaaagt	tgagtaagtt	ggatgggtaa	gtgtggattg	ttttgtataa	tttgttggtta	480
agttttgagg	tttaggtgtg	ttattgtttt	ataagttttg	ttaagggatg	gttattttaag	540
gtagattttt	ttttgtatta	gtttttatag	tttttagtatt	gtttttttta	ttttattttg	600
attgtgtttt	tgttgtttat	ttttgtttat	ttattttta	tttagtggtt	tttttagttt	660
ttgggtttta	ggtgatatat	tagtttagtg	gatatgggtt	tttataggta	tttttagttt	720
aatttagttt	tttttttttt	tttggttttt	tgggttagtat	ttgtattata	ttgggtttta	780
ttggatattt	ttgtagtttt	gggttttttt	tatagatata	ttgttggttt	agttgtttta	840
tttggtttat	ttgtagagtt	ttttggttta	tttgatttta	attgaaattt	agttttttta	900
gaaggatttg	gtgttggaat	aggtaggtat	tggaaagtta	gttgttttag	attattgttt	960
tattttatta	gtattttttt	gttatttttt	attttttttt	tttagatttt	agaaattttg	1020
gagtggtttg	agtgaagaaa	tagaggtaag	tggtaggtaa	ttgttaagta	ttagttttag	1080
tatgtgttta	gttttttaga	gtaggatttg	tgggtgtagg	tgtgaaggtta	aggtttgtgg	1140
aatggtagg	gaggggtggg	gggatgtagg	aggtatggat	gtgggtgggg	gttttttatt	1200
tttaggggtt	agtttagattt	ttttgatttt	tttttaggtg	ggttgagatt	tatagggttg	1260
atgtgttaga	ggtagtgggt	ttagagtggg	tttgttgtgt	ttattgtagt	gtagaggttt	1320
ttaagtgttg	tttatgatgt	tagaatgagt	ggtattgttg	taggtgaggg	tatttttagaa	1380
ttttggattt	ttaagtttta	tttttatatt	ttttatatgt	attgttattt	ttaatattta	1440
tttgtttgta	gggagtgtta	agtttaagat	tgggaaaagt	atggaaagat	ttgtgttttg	1500
gtagtttagg	gtgatagagt	ttaagtggg	ttgtagtgtg	tgagggttga	ttatttatgt	1560
taagggaatt	tatttagaat	gtatttttga	attttaagat	tatgggttag	tttttgttgg	1620
agtttttagt	tttgtagtgg	agagttagagt	gggtggtaaa	gttgttgatt	gatttttttt	1680
ttttttattt	taagtgaagg	tttgagattt	tttgttttat	ttagtgggtta	ggttaagtgt	1740
gttgttttag	ttaattggat	taggaggggt	aggggtggat	gtggggattt	ttttttttta	1800
gtatagtaaa	gttgggtttt	agaaatatgg	gtatttttgt	gtgggtgttt	gtgggtgttg	1860

ttgtttgtggt	tgttttggggt	ggggtgtgag	gaggggatga	aggaggggaag	gaagggtaag	1920
gtggggggggg	ttttgtgaga	gtgtgtttag	ttttgttttt	gggtttttata	gtttttgtat	1980
ttaggttttt	attgtgtggt	tttttttagt	ttttttttgt	tgttttagttt	ggattttggg	2040
ggaggtgttg	aagttggggt	ttgttttgtg	gttttgtttg	gtttgtgttt	gttagtggtt	2100
aaagtttagt	aagtattggg	ttaattgggt	tatgttgggg	gagtttgagt	ttattgagtt	2160
gtgggagttg	gtatttgttg	ggtgtgttgg	gaaggggttg	atttggttgg	agtgtgttaa	2220
tgtgttgtgt	attgtgtggg	gtattgtgtg	taattttata	tggtagtggg	tttttgggtg	2280
tggttattgt	tttttagttg	tggggtttgt	tatgtatatg	tggtgtgatt	tttgtggtga	2340
ttttattttg	ggtgttgtgt	gtaaagggtt	gtagtgtgtg	tgtgagtagt	ggttttgtgt	2400
gtttatgaga	gtggaagggt	tagttaaggg	gtagtgtagt	tgttgtgggt	taagttgttg	2460
tagagggggg	tggtggggat	agtttttgag	gatttaggtt	g		2501

<210> 40

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 40

agtataaaat	tgttttaagt	ttttgatttt	gtattttattt	taaagattag	tgtttgtttg	60
aagttttgtt	agtttttattt	ttattgaaat	aggtgtatat	ttaggtttta	agttaaatgg	120
atttgaaaaa	agtttttaagt	tttttttaaat	gaatttgagg	tttttaaaat	gtttttttaaa	180
tttttttttg	agatgataga	ttattatttg	atattttatta	ggattaaata	ttttttttatt	240
ttttttattt	tgttgtttta	gtttattaat	aatttttttg	agggtaggaa	agtttgttag	300
attttttttt	ttaatatgtt	tttgaaataa	atttagttta	attttgaaag	tataaatatg	360
gttaaaggta	gtagtagtaa	agatttttatt	aatttgtaat	tttttattga	gtttttgaag	420
gtgttttata	atgtttatta	agaagttaaa	gttataaagt	tattgtttgt	ttgagaagtg	480
gattgttgtt	gtttttattg	aaatttaagaa	tgtttttatt	ttttttttta	gagagaatat	540
tagtttttaa	gttttttttt	ttttaagtta	attgtttaga	tattgtttat	taattttttt	600
attatgtttt	gatttagatt	ttgttagtaa	agtttgaaat	ttaggttgtt	taatgttttt	660
ggttttaatt	aaaattattt	atttggatat	ggtatttatg	atttgattaa	tatttatatt	720
ataggagttt	aatagtttta	agtgaagaaa	ttttgaataa	tgaatgatat	tttaatatgt	780
ggggtttatg	gttttttttt	ttatgtatga	gatgagtttt	gagtttttat	taattatttt	840
ttaaagtatg	gttgtgggta	gtttaattat	tttttctaag	ttaagttttg	ttgtttgtag	900
ggatttttag	attgttgata	tgagtgtatt	aatattgaaa	tgatgagtta	ggttgattat	960
ggttagaaga	tttttttgta	tttttaattt	agggtttata	ttgtggataa	agattaggag	1020
gtagttttta	taggttataa	aagtttgggt	gtttaaggta	agagaatagg	tttttaaagtt	1080
tttggtttgg	ttaaaaagtt	ggttgtgtag	atttttggtt	atgttttagga	ttttttgttt	1140
tgtgatattt	ggagataagt	taatgttttg	taggatgttt	atatgttttg	gtagtatttt	1200
tttttagta	atttttatgt	attgggtatat	aaagtttttt	ttatttttagt	tgtgattttt	1260
taagggttaag	aggtggtaga	gtttgagggt	tgtatgagta	gttttttttt	taggagtgaa	1320
ggagggttat	ggttaagtgt	tttgatgtag	atgtttttatt	agggttgtgt	gtttgtgttt	1380
tgttatatat	tgtttgtagt	atttgtgttt	agttttgtag	tggtgtttga	tgttgtgttt	1440
gtgggtagtt	atgatgaggt	ggtgatagat	taggtatagg	gttttattgt	tttttggagg	1500
tttttatttt	aaataatgtt	gggttttattt	gggttggaaa	attagagttt	tgttgatttt	1560
tattttgttt	tttttgggtg	ttattttatat	tttgtgggag	gttataagag	taggggtta	1620
gttagaaaag	ttgtaagggg	agaggaggag	tttgagaagt	gttaagtatt	ttttttgttt	1680
tgtgttagat	tatttttagta	gagggtatata	agtttgggtt	tggtattttt	gtttttattg	1740
gttggtatatt	ttgtattttt	tgagttttta	aaaatgaatt	aataggaaga	gtggatagtg	1800
atttttaaat	tgtaagtgtg	tatttttttta	ggtagtgggt	agtagttgtt	ttaggagggg	1860
atgaagagat	ttagtaattt	atagagttga	gaaattttgat	tggtatttta	gttgtttaat	1920
taatagttgt	tgttgaaggg	tggggttgga	gggtgtgaag	tatagttgaa	ggaagaatgt	1980
gagtatgagg	tattgagggt	attgggtgaa	ggtatttttg	ttgagtattt	agatgttttt	2040
ttgggttttt	tggtgtttaa	atgttgtttg	tggtaggggt	tatttgggtg	ttggatgaga	2100
tagtgggtgaa	ttgtattgtg	gtgggggaag	ttatttagtg	gttagttaat	gttattaaag	2160
agatgattga	gaattgggtat	ggagggaggt	gagttgggtt	tatttaaggg	ttatgattta	2220
atgggttgtg	ttattttaatg	gtgtggatat	gtttttttgt	ttgggttagag	gtatgtatag	2280
tgtatgttta	taatgggtgga	gggttgttgg	tttttttgat	tgttagttag	gttttttttt	2340
ttttttaga	ttgtgtgttt	ttttattgtt	tttttttgag	attttttaag	ggttgttttg	2400
agtgtaaagt	gaggaatata	tgtagtgttg	ttttaatggt	attgtttaat	aagtaaggaa	2460

gttattttaat ttaaaattat gtatgtagaa tatgtgaagt t

2501

<210> 41

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 41

aatttttgat	gttttgtata	tataaatttta	aattaagtgg	ttttttttatt	tagttaaatgg	60
tattattaag	ataatattat	gtatatatttt	ttattttatat	tttaaataat	ttttaaaagg	120
ttttggggga	gagtggtaaa	gaaatatatg	gtttgtggaa	aaggagaagg	tttgattggg	180
atgtagaggga	atttgggtgg	ttttgttggt	gtgggtatgt	gttgatatatg	tttttgtttg	240
ggtaaagagg	tgtgtttgtg	ttattgagtg	atgtggtttg	ttaagttgta	gtttttaagt	300
gagtttggtt	tgattttttt	tgtattagtt	tttaattatt	tttttgatag	tattagttgg	360
ttggtggata	attttttttg	ttgtgatgtg	gtttattatt	gttttgttta	gttgttgaat	420
aatttttggt	atgaatgata	ttttgggtgt	agaagagtta	aggaaatgtt	tagatgttta	480
atggaagtgt	tttttagtta	ttatttttagt	gttttgtgtt	tatgtttttt	ttttagttgt	540
agttttatgt	attttagttt	attttttagt	ggtagttatt	gattggatag	tttgaatgtt	600
agttaaattt	tttaattttg	tgggttggtg	gggttttttg	tttttttttg	aagtggttat	660
tgtttggtat	ttagaaggat	atgtggttgt	gtgtagaga	ttggtgtttg	ttttttttat	720
tgggttggtt	ttaggagttt	ggggaatatg	aaataatttag	ttaataggag	tagagatgtt	780
ggaattgggt	ttgtgtgttt	ttgttgaggt	gatttggtgt	agagtggagg	aggtgtttgg	840
tgtttttttag	gttttttttt	tttttttggt	gtttttttta	tggtgggttt	gtttttgtgg	900
ttttttgtag	aatgtggatg	atgtttaaaa	gaagtaagat	ggaagttgat	gagggttttag	960
ttttttgggt	tgagtggatt	tagtggttatt	tgggtgggga	gtttttggag	gggtgatgggg	1020
ttttgtgttt	gggttggtgt	tgttttattg	tagttatttg	tgaatgtgat	gttaggtgtt	1080
attatagggt	tgagtatgaa	tattatgagt	ggtagtggt	ggatgggtgag	tgtgtgggtt	1140
tggtggagtg	tttggttag	ggtagtttgt	ttgtgggttt	ttttattttt	gaagagagag	1200
ttgtttgtgt	aggtttttgg	ttttgttggt	ttttgggttt	gaagggttgt	gggtgggggtg	1260
agggggattt	tgtatattag	tgtatggagg	gtttgttgag	agaggatttg	tttgagtatg	1320
taagtgtttt	gtaagggtgt	gatttatttt	tagatattat	aaggtagagg	attttgagta	1380
ttgataggaa	tttatgtaat	tagtttttta	attgagttag	ggatttttaa	gtttattttt	1440
ttgttttgga	tgattaggtt	tttgtgggtt	atgagaatta	ttttttgggt	tttatttgtg	1500
gtgtaggttt	tgagttggag	gtgtaagaag	attttttgat	tataattaat	ttgatttatt	1560
atttttagtg	tggtgtgttt	atgtttggtta	tttttagagtt	tttgtagata	gtagggttta	1620
gtttgttagg	aatgggttga	ttgattatga	tttatatttt	gaggatgatt	gggtgagaatt	1680
taggatttgt	tttatatatg	agagaaaagg	ttgtaagttt	taattgtttg	aatgttattt	1740
attatttagg	atttttttat	ttggaattgt	tgagttttta	tgatgtagat	gttaattaga	1800
ttataaatat	tatatattgaa	tggatagttt	tgattaagat	tagagggtgt	aggtgatttg	1860
aatttttagat	tttattaatg	gaatttgaa	tagagtatgg	tgaaaggggt	aatggatgat	1920
gtttgaaata	ttgggttagg	agagggaaaa	ttttaaaatt	aatatttttt	ttaagaaaag	1980
aaatggaagt	gtttttgggt	ttagtagggg	taataatagt	ttattttttta	gataaataat	2040
ggttttgtga	ttttgggttt	ttggtggata	ttatggaata	tttttgagaa	tttagtgaag	2100
aattatgagt	tagtaaagtt	tttgttggtg	ttgtttttga	ttatatattgt	atttttgaag	2160
ttaagttgaa	tttattttaa	agatatattg	aggaaaaaaa	tttaatagat	ttttttgttt	2220
ttagagaagt	tggtgatgag	ttaaaatagt	aaaataagga	agatgaaaaa	atatttgatt	2280
ttgataggta	ttaaatgggt	atttgttggt	tttaaaaaga	atttgagaga	tattttaagg	2340
attttaggtt	tattaaaaag	gatttagaat	tttttttaaa	tttatttaat	tttaaatattg	2400
aatatgtatt	tatttttagt	aggggtggagt	taataaaaatt	ttaggtaaat	attaattttt	2460
ggaatgaata	tagaattaaa	gatttggggg	agttttatgt	t		2501

<210> 42

<211> 3838

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 42

gtagtaggta	tttgtttaag	tttgatggaa	ggattttttt	agttttttta	tatatattat	60
gtaaagtgat	tggtgttttt	gttttttttt	ggagattatt	tatttttatt	ttttgagatg	120
gagttttgtt	ttgtttgtta	ggttggagt	tagtggtgta	attttgattg	attgtaattt	180
ttgttttttg	agtagttggg	attatagggt	tgtgttatta	tgtttggtta	atttttgtat	240
ttttagtaga	gatgggggtt	tattatgttg	gttaggttgg	ttttgaattt	ttgatagtaa	300
gtgatttatt	tattgtgggt	ttttaaagt	ttgaaattat	aggtatgagt	ttttatattt	360
gtttaggagt	ttatttatat	gggagtttgt	ttttaaagat	tattatttgg	tgtagggta	420
tttttttagat	ttgtttttat	atttttgtta	aataggagga	agtgaattgt	gttttttttt	480
atttattttt	ttggagggtt	tatgttttta	atattaattt	tagtatagtt	aaagaaaatt	540
attttatttt	attgagtgga	gttagaaata	tgattagggt	atgattataa	ttttgtgtgt	600
gttaggggtga	ttgagattgg	gtgattttat	gggtgtttta	tgtgtgggtt	ttgattgatt	660
atattatggg	tttttttagt	aaaaatttaa	agtagtggat	aaagtatttg	tgatttaaaa	720
taagtaatgg	aatgaatagg	aagggtgaaat	tagagtttaa	agtggtagga	taaataggaa	780
aaaggaagag	tgaggtagga	agggtttaaa	tgtagggttt	ttggaggata	agttgttgtt	840
atatttttgt	ttgtttgttt	gttagtttgt	tttatgttgt	gtgggaaaat	ggttgggttt	900
gttttggttt	taggtttttt	ttgtttgtta	ggtagtgggg	tttttttttg	ttttttttga	960
gatggagttt	tgtttagttg	tttaggttgg	agtgtagtgg	tgtagattttg	gtttattgta	1020
attttttatt	tttggtttta	agtgattttt	ttgttttagt	tttttgagta	gttgagatta	1080
taggtatgtg	ttattatgtt	tagttaattt	ttgtattttt	agtagagatg	ggtttttatt	1140
atgtttggtta	ggatggtttt	gatgttttaa	tggtgtgatt	tggtttgttt	ggttttttta	1200
gtgttgggat	tataggtgtt	agttattgtg	tttggtttta	gttaggtagt	tttaattgag	1260
tgtttataat	tattgagatg	tagtgaagta	ttttattata	aatttttagga	ggttgattgt	1320
tggttttagat	tttttttttt	ttttaatttt	tgtttaaggg	atttgttttt	attttttatt	1380
ttagttattt	taatttttta	tttttttttt	ttggatgggt	ttggggaaaa	taagttgttt	1440
gagttttatt	tttttggtgt	aattaattta	gaatgaattt	ttttgttttt	gtgtgtttag	1500
tgagttggta	tttttagtagt	gaattgtatt	taaaatttta	ggaattgagt	gaattttttt	1560
agtgggtttt	tttattggga	ttttttttta	tggttttttt	ttgtgttgtg	tttttagttg	1620
tattgtttat	tggtttgtgt	ttttgttaat	ttgatgtatg	ttgggttaggg	taaagattgt	1680
gaaaaagtgt	gtatattttg	ttttgggagt	gtgtgtttta	tggttagttag	tagtagggag	1740
tggtgtgaggt	attatgggtt	gggtgttgag	agttaggagg	gaattttatt	tatataatgg	1800
ttgttttttt	gtttttttgt	gggggttgga	gttttggttt	ttgtttaatt	tgaaatttgt	1860
tggttttatgg	gttagttatt	ttgatttagg	taagtttgtg	gtggagttgg	aagagtttgt	1920
gaggggtggt	ttgggagtgg	attgggtttg	ggagttttta	gaggtgggta	taagaattgg	1980
gaattgggtg	tggggagtgg	agttgtttgt	agtgttttgt	gtgtttgggt	tgaggtgggt	2040
gttagttgat	tttgtggagt	ttattttttt	ggtttttttg	ttttaatggt	gtttgttttt	2100
tagttaggat	gtttgtttgt	ggtttggtta	ttggtattga	tttggttatt	atttatttgt	2160
gtgttggggt	tttttaatat	ggtaagggtg	agattattgt	taatgattag	ggtaattgta	2220
ttatttttag	ttatgtgggt	tttatggata	ttgagtgttt	tattgggtgat	gttggttaaga	2280
attaggtggg	tatgaatttt	attaatatta	tttttgatgt	taagagggtg	attggatgga	2340
aaatttagaga	tgttatagt	tagttggata	tgaaatattg	gttgttttgg	gtggtgagtg	2400
agggaggtaa	gtttaaagt	taagtagagt	ataaggggga	gattaagatt	ttttttttag	2460
aggagatatt	ttttatgggt	tttatgaaga	tgaaggagat	tggtggaagt	tatttggggg	2520
gtaaggtgta	tagtgtgggt	ataatgggtt	tggtttattt	taatgatttg	tagtgttagg	2580
ttattaagga	tgtagggtatt	attatggggg	ttaatgtgtt	gtgtattatt	aatgagttta	2640
tggtgggtgg	tattgtttat	ggtttggtta	agaaggggtg	tgtgggtggt	gagaagaatg	2700
tggtttattt	tgatttggtt	gggtgtattt	ttgatgtgtt	tatttttgatt	attgaggatg	2760
gtatttttga	ggtgaagttt	atgggtgggt	atattttatt	gggtgggtgag	gatttttgata	2820
attgtattgt	gagttatttg	gtggaggagt	ttaaagttaa	gtataagaag	gatattgggt	2880
tttaataagt	tggtgtgagg	tggttgtgta	ttgtttgtga	gtgtgttaag	tgtattttga	2940
gtttgtttat	gtaggtgagt	attgagattg	atttgtttta	tgagggtgtg	gattttttata	3000
tggtttattat	gtgtgtttgt	tttgaggagt	ttaatgttga	ttttttttgt	gggatttttg	3060
agttgggtgga	gaaggtgttg	tgtgatgtta	agttggataa	gggttagatt	taggagattg	3120
tggtgggtggg	tggtttttat	tgtattttta	agatttagaa	gttgtttag	gattttttta	3180
atggtaagga	gttgaataag	agtatttaatt	ttgatgaggt	gggtgggttat	ggtgttgtgg	3240
tgtaggtggg	tattttttat	ggtgataaat	tagagaatgt	gtaggatttg	ttgttatttg	3300
atgtgatttt	gttgtttgtt	gggtattgaga	tagttgggtg	tggttatgatt	ttattttatta	3360
agaggaattt	tatgattttt	attaagtaga	tgtagatttt	tattatttat	ttggataaatt	3420
agagtagtgt	attgggtgtg	gtatatgagg	gtgaatgggt	tatgattaag	gataataaatt	3480
tggtgggttaa	gtttgatttg	attgggattt	tttttgtgtt	ttgtgggggt	ttttaaattg	3540
aggttatttt	tgatattgat	gttaattggt	tttttaattg	tattgttgtt	gataagagta	3600
ttggtaagga	aaataaaatt	attattatta	atgataaagg	ttgttttagt	aaggatgata	3660



ttgattggat	ggtgtaggag	gtggagtgg	ataaattgga	agatgaggtg	aattgtgatt	3720
gagttgtggt	taaaaatgtt	ttggagtttt	atatttataa	tattaagtag	atgggtggaag	3780
atgagaaatt	gaggggtaag	attagttagt	aggataaaaa	taagattttt	gataagtg	3838

<210> 43

<211> 3838

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 43

tattttgttga	ggatttttgtt	tttgttttgt	ttgttaattt	tgttttttag	ttttttgttt	60
tttattgttt	gtttgatgtt	gtaggtatag	gatttttaggg	tgtttttggt	tgtgatttgg	120
ttgtgatttg	ttttattttt	tgatttgtat	tgttttgttt	tttgtattat	ttggttaatg	180
ttgtttttgt	ttagatgatt	tttgttattg	gtgatgggtga	ttttgttttt	tttattgggtg	240
tttttgttgg	tgggtgtaaat	gttaaggatg	ttattgggtg	taatgttgaa	ggtaattttg	300
atttggggga	ttttgtgagg	tgtaggggga	attttgggtta	ggttgaattt	gtttagtagg	360
ttattgtttt	tggttatggt	ttgtttgttt	ttgtatatatt	gtattagtat	gttgttttgg	420
ttgttttagt	aggtggtgaa	ggtttgtggt	tgtttggtgg	ggattgtggg	gttttttttg	480
atgagtgggg	ttatgatatt	gttagttggt	ttgatgttta	gtgataatgg	ggttatgttg	540
agtagtagta	ggttttgtat	attttttgat	ttgttgttga	tgaggatggg	tgtttgtatt	600
gtgggtgttat	aggttattgt	tttgttgggg	ttgatgtttt	tgttttagttt	tttgttgttg	660
aagaaatttt	gtagtagttt	ttggattttg	gggatatgag	tggagtgtgt	tattagtagt	720
attttttggg	tttgggtttt	gtttagtttg	gtgttgtgta	gtgttttttt	tattgggtttt	780
aggggttttgt	gaaagagggt	ggtattgagt	tttttgaagt	gggtgtgtgt	gatggatgta	840
tagaagttta	tgtttttgta	gagttagttg	attttgatgt	ttgtttgtgt	ggatgagttt	900
aggggtgtgt	tgggtgtgtt	gtaagtgggt	tgttagttgt	ttatggtgtg	tttgttgggt	960
ttaatgtttt	ttttgtgttt	gtgtttgaat	ttttttgtta	gggtgtttat	tatgtgggtg	1020
ttgaagtttt	tattgttttag	gtgggtgttg	ttgggtgtgg	attttatttt	gaagatgtta	1080
tttttgatgg	ttaggatgga	tatgttgaaa	gtgttattgt	ttagggttaa	gatgagtatg	1140
ttttttttgt	tgtttgtgta	gttttttttg	tttaggttgt	aggtgatggt	tgttgtgtgt	1200
ggtttgttga	tgatgtgtag	tatattgagt	tttgtgatgg	tgtttgtgtt	tttgggtggt	1260
tgggtgttgt	agttgttgaa	ataggttggg	attgttatga	ttgtgttgtg	tattttgttt	1320
tttaggtagg	tttttgtgat	tttttttatt	tttgtgagga	ttatggagga	tatttttttt	1380
gggaagaagg	ttttgggttt	ttttttgtat	tttatttcta	ttttgggttt	gttttttttg	1440
tttatttatt	ggaatgggta	gtgttttata	tttgattgta	ttgtgggtatt	tttgaatttt	1500
tgtttaatta	gttttttggg	gttgaagatg	gtgttgggtg	ggtttatggt	tatttgggtt	1560
ttggtggtgt	tgttgatgag	gtgtttgggt	tttgtgaagg	ttatgtagtt	gggggtggtg	1620
tgattgtttt	ggttgttggg	gatgattttt	attttgttat	gttgggaagt	tttgatgtat	1680
gaataggtgg	tgtttaggtt	gatgttgata	gttgggttat	gggtagatat	ttttagtgaa	1740
aggtgagtga	tgttaggatg	ggaaaattag	ggagatgaat	tttgtggagt	taattaatgg	1800
ttattttgaa	ttaagtatta	tgggtattat	tagtaattta	gttttttctg	tttagttttt	1860
ggtttttata	gttgtttttg	ggaattttta	gatttaattt	gtttttggga	ttgtttttat	1920
aaattttttt	agttttatta	taggttttgt	taggttggag	tgattggttt	gtgatttaat	1980
agattttaag	ttggatgagg	ggtgggattt	tgggttttgt	taggagatag	aggggtggtt	2040
gttatgtaaa	tgagggtttt	ttttgatttt	tgggtgttag	gttgtggtgt	tttgtgtgtt	2100
ttttgttgtt	ggttgggtgt	aggtgtgtgt	ttttagagtt	aggtgtatgt	gttttttttg	2160
ggtttttgtt	ttagttgatg	tgtattggat	tggtagggta	tgtgggttaat	gagtagtgtg	2220
gattgaggtg	tggatagggg	aggaggtgtg	gaaggggatt	ttgggtgagga	gagttatttg	2280
gagagtttgt	ttaatttttt	aggtttttaa	tgtagtttat	tgttaggggtg	ttgatttatt	2340
gagtagtagt	gggtggagga	atttattttt	agttgggtgt	attgaagaaa	taaagtttga	2400
gtagtttgtt	ttttttggtg	ttgtttaagg	ggaggggaata	gggaattggg	gtgggtgggg	2460
tgggggtgga	gggtggattt	tttggatggg	gattaaagaa	aagaaaaagt	ttgaattggg	2520
ggttgggttt	ttgggatttt	atgggtgggt	ttttatttgt	tttttagtgt	tgtgagtgtt	2580
tgattaaaaa	tgtttgggtg	gggttgggtg	tagtgggttaa	tgtttgtaat	tttagtattt	2640
gggaggttga	ggtgggttga	ttatgatgtt	aagatattga	gattattttt	gttaaatagg	2700
tgaaagtttg	tttttattaa	agatatataa	attagttggg	tgtgggtggg	tgtgtttgta	2760
gttttagtta	tttgggaggt	tgaggtagga	gaattgtttg	aatttggggg	gtggaggttg	2820
tagtgagttg	agattatgtt	attatatttt	agtttgggtg	attgagtgag	attttgtttt	2880
aaaaaaaaa	aaaaaaaaa	ttattgtttg	gtgggtggag	agaatttgag	tttaggggtga	2940

ggttgattgt	ttttttgtgt	tgtgtgaggg	tgggtgggtg	gatggtagat	aggggtgtgg	3000
tgggtgatttg	ttttttgagg	agtttgtatt	taaatttttt	ttgttttatt	tttttttttt	3060
tttgtttgtt	ttgtttgttt	aaattttggg	tttgtttttt	tgtttttttt	attgtttatt	3120
ttaggttgta	agtgttttat	ttattgtttt	gagtttttga	ttggaaaatt	tataatataa	3180
ttagttaaaa	tttatatggt	gaaatattat	aaagttattt	agttttgggt	attttggtat	3240
atatgggggt	gtgattgtga	tttagttatg	tttttgattt	tgtttaaatg	aatggaatga	3300
ttttttttgg	ttgtgttgag	gttaaatattg	gaggtataaa	ttttttgaga	aggtagatga	3360
aaaggagtgt	gattttatttt	tttttgttta	ataggaaatgt	gaggataggt	ttggaaaata	3420
ttttgggtatt	aggtaataat	ttttagaagt	aggtttttat	ataaatgggt	ttttggatgg	3480
gtgtggaggt	ttatgtttgt	agtttttagta	ttttgaaagg	ttgtggtagg	tggattattt	3540
gttgtagtaa	gtttgaggtt	agtttggtta	atatggtgaa	attttgtttt	tattaaaaat	3600
ataaaaaatta	gttgggtgtg	gtggtgtgtg	ttttagtttt	tagttatttg	agaggtagag	3660
gtttagatta	gttgagattg	tgatattgta	ttttagtttt	ggtgatagaa	tgagattttg	3720
ttttaaaaaa	ataaaaataa	tgggtttttg	gaggaagtaa	agatagtgat	tattttatat	3780
aatatgtgtg	gggaggttgg	ggaagttttt	ttattaagtt	tgaataggta	tttattat	3838

<210> 44

<211> 2893

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 44

ttttggtttt	agatatagtt	aagttgttat	aataattagg	gggatttaga	gggagtatta	60
ggagggggag	gattttttta	agaggtgaga	aggggtttgt	ggttttgttt	ttagttgagg	120
gtgggaggtg	ttttgttttt	atatttattt	gtttttttta	atttaggttg	gggaggggtat	180
ttatatgggt	ttaggtaagt	aataataaaa	taatatggta	ttttagttaa	tggtgtgtgt	240
atgggtgggtg	ttgtttggta	aatttggaag	gggaaggagt	ttaggtagtt	gtggaggatg	300
gggttgaggg	ggatgtgagt	taggtttttg	tggtttatgg	tggttatgat	gtgttggtgg	360
tatagttttt	gtagtgggtg	tatgtgggtg	tgggttagtg	gggttttttag	tatgtgggtg	420
gggtgtgttta	tgtagtggtt	tagtagtttg	aagaggtagt	tgaagttttt	gtggttgtta	480
tttaggtgaa	agtggttggg	ttgaaagtgt	atgtggatgt	ttgtgggttt	tgaggttatt	540
tttatgttaa	gggtgaaaaa	gtagttttgt	tgggtggtgt	tgtgtattag	gaaggtgttt	600
atgggtttgg	tggtgtagttg	tttgtgtgtt	ttgtgtatgt	ttaggggttt	ttagtagaat	660
ttgtaggtgt	ttaggagtgt	gttgggtgtg	gtgatgtgtt	ggtaattggg	gtgtgaatgg	720
aatgtgtgga	agtgtgtgtt	gttgggggtt	gggttgagg	ttgtggggta	tggttgtggg	780
tgtgtggggg	ttgtgggtga	ggaggaggaa	gaggaggaa	gttttggttg	ttgttggggg	840
ttgtttgttg	tggaagattg	attgttggtt	gttatttggt	tgtgtgttat	tattttatag	900
aaggggttag	ttggagggtt	gggttatagt	gtttgggggt	gtgttgtggg	agagataaag	960
agggtgagttg	gggtgtgtgtg	gggttgaggta	gggtgtgtgt	ggttggataa	ttttggaggg	1020
tggtgttttt	ggtggattttg	gttttagggg	gtgagtatgg	agtattaaat	ttgtgtggat	1080
ttgttttagtt	ttagtggata	tagttagaaa	atgggttttg	tattttgtgg	agtttttttt	1140
gggtgggtggg	ggtttgggtg	aggtggagtt	tgggtttttg	gtagtattga	gaggggggtg	1200
tggagagtag	ttggtttttg	tttttagttg	ttgggttttg	tttgtttgtt	tggtttgtgt	1260
gtttgttggt	taggttgagg	tttgtgtttg	gtttgggtga	tttgggttag	gggttgagaa	1320
aggttgtgtt	gtgggagttt	tgtgtgtggg	gggtgtgttt	gggtgggttg	gtgaggggta	1380
gggtgattgt	ggttgtgatt	ttattttgta	gtttttgagg	tttgtttgat	ttttgggtgt	1440
tttggatttt	tttttttttt	tttttttggt	ttttttgtta	gggtttgggt	tattttggtg	1500
tgggtgtgtg	gatgttgttg	gtgggatggt	gggggttttt	gggtgttttt	gggtgtgttt	1560
ttgtgtatgt	tttgggggtta	ggagttgtgt	agttgttatg	gttgtagttt	gttttgtttg	1620
gtgtttgttt	ttgtgttagt	tttttaaatt	ggtttgagg	tgggtttggg	gatgggtggga	1680
ggttttgttt	tttgttggtt	ttgttttttag	ttttattttt	gggttttttt	tttgtgggtg	1740
tggtttggtga	ggattgtttt	ggttttgttt	tttttttttt	tggatttttt	tgtgggggtt	1800
tttgtttgtt	tggtttgtatt	tggttttagta	tttgtttttt	gaggggtttt	gggttttgatt	1860
ttgtgttttt	tgggtattttt	ttggattttt	tttttggttt	tgggtatttt	gattttgttt	1920
tgtttttttg	gggttttttt	tttgtttgta	gggttttttt	ggatgtgttt	tgatatattt	1980
ttttttgttt	tagttgtttt	tatatgtgtt	gggggttagag	ttttgttttt	tttttttttt	2040
tagtttagatt	tttttaggag	gttatagaag	gtgttttttaa	tttttagttt	gattttattt	2100
gtagattttt	tttttagttt	tggtttattt	gtgtttgatg	tttttagttg	tttgtttttg	2160
tggtttgaag	ttttgggttg	ttgtgggttt	tgggttttgg	ttgggttttt	tgggaagtgg	2220



tggtttgatt	atagggttta	gaggaatttt	tgggtggtgtg	ggtgttttta	ttttggttta	2280
gttttttgga	aattgggtgg	ggttgggtaa	ggtttttggt	ggtttttgatt	gttttttttg	2340
tgtttttatt	atttgggtgt	ggaagaaatt	gagggtgggg	aggggttggg	atttghtaatg	2400
gtttgtagat	tgggagtttt	ggatttgga	tttgtttttt	ttgtttttat	tttggggaga	2460
ggtgtagttg	gatgatatta	aattggagtt	tagtgaaaaa	atgggtgtatt	tttagatgtg	2520
atgaattttt	aaatttggtt	tttttagttt	tttttttttt	gatttttttt	ttatagattt	2580
ttttttttta	ttgttttggt	aggtatttgt	tttttaaaga	ttgttttttt	attatatata	2640
tgggtggggg	ttgggatggg	gggtgggttg	tgggtggggg	tgtaatgtgt	atatgtgttt	2700
gtgatttagt	gattttgatt	gttgtgtgag	gttatggagt	aggtgttttg	ttgttttgtg	2760
tatttttgaa	tgaaggtatg	tgaggagttt	tagtattata	aggggttata	taaaaatttg	2820
gttaggttgg	gtatttggtt	attgggttta	tattgggata	tattgttttt	tatagatagt	2880
tttttagatg	ttt					2893

<210> 45

<211> 2893

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 45

aagttgtttg	agagttgttt	gtagagggtg	gtgtgtttta	gtgtgaggtt	agtaattaag	60
tgtttagttt	agttaggttt	ttatgtggtt	ttttgtgatg	ttgggggttt	ttatatgttt	120
ttatttaaaa	atatatggag	tagttaggta	tttattttat	ggttttgtat	gataattgga	180
attattaaat	tataaatatg	tgtgtaaatt	atagttttga	ttattgattg	tttattattt	240
taagtttttg	ttgtgtgtgt	ggtgggaagg	tagtttttga	agggtagatg	tttgatggag	300
tagtaggagg	gggaaattta	tgaggaaggg	gttgggggag	aggagggtta	ggaaattagg	360
tttggggatt	tattatgttt	gagaatgtat	tattttttta	ttgggtttta	atttgatgtt	420
gttttagttg	attttttttt	aaaatgaaga	tggggaagggt	gagatttagg	tttagagttt	480
ttaatttgta	agttattgta	aatttttagt	tttttttagt	tttagttttt	ttttagtttg	540
ggtagtgagg	gtgtagggag	ggtagttgag	gttattaggg	attttgtttg	gttttgttta	600
gtttttgagg	aattgggttg	gggtggaggt	gtttgtgttg	ttaggggttt	tttgaagttt	660
tgtggttagg	ttgttgtttt	ttgggaagtt	tgagttaaga	ttagagattg	tggttggttg	720
gggttttggt	atagtagggg	gggtgattga	gggtgttgat	gggtgggtgga	gtaggggtta	780
ggaggggggt	tatgggtggg	gttaggttta	gggttgggga	tattttttgt	ggtttttttag	840
ggggattttg	ttgtagggga	ggagaggata	gggttttggt	tttgggtggg	gtggagatag	900
ttgggggtga	ggaggggtgt	ttaggggtgt	ttttaagagg	gtttggtggt	agaaagtgga	960
atttgaggta	tgggggtaaa	attgggggtt	ttaagtttga	aggaggggtt	tgagaagtgg	1020
ttggaagggt	taggggtggg	gttagagttt	tttgagaggt	gggtgttggt	gtaggtgtga	1080
ataggtgggt	agaggggttt	gtgggagggg	ttagaagaga	gggaaatagg	gttgaagtgg	1140
tttttggttg	atgttattgt	ggaaagagaa	attaaaagt	gagttggggg	tgggttggtt	1200
aggggggtgg	gttttttggt	gttgttagtt	ttgtttttga	gttgggttaa	aagattgggt	1260
taggggtggg	tgttgaatag	agttagttgt	ggttgtggta	gttgtatggg	ttttggtttt	1320
ggagtatgtg	tgagagttgt	tttggagtgt	tttggagttt	tttgttgttt	tgtttgtggt	1380
gttttggtgt	ttgttgttag	gtgagttggg	ttttgggtga	ggaggtggga	gggaggaggg	1440
aggggagttt	agggtagtta	ggagttgggt	gagttttggg	ggttgtagaa	tgggggttgt	1500
gttgtgatgt	ttttgatttt	tgttgggttt	atttaggttg	ttttttgtgt	gtgggggttt	1560
tgtagtatat	tttttttttg	gttttagttt	aaattgttta	gattaggtgt	ggatttttagt	1620
ttgggttagta	ggtggtgggt	gtggggtggt	gagttggggg	tggatgggtg	gagttagaat	1680
tgggtgtttt	ttatgttttt	tttttggtgt	tgtttggagg	ttggattttg	tttttatatga	1740
gtttttatatt	gttgggaaga	gttttgtgga	gtatagagtt	tatttttttag	ttgtgtttat	1800
tgaggttgaa	tggatttgtg	tggatttggt	gttttgtgtt	tgttttttag	ggttgggttt	1860
gttgggagtg	ttgttttttg	gagttgtttg	gttgggtgtat	atttgttttg	ttttgttagtg	1920
tttttagttta	tttttttggt	ttttttgtag	tgtatttttg	gatgttatgg	tttatttttt	1980
tgggtgggtt	ttttttagg	atggtagtat	ataattaggt	ggtagttgat	aatgtagttt	2040
ttatagtagt	agagttttga	tgggtggttag	aatttttttt	tttttttttt	tttttgtttg	2100
tgggttttgt	gtgttttgtg	ttgtgttttg	tgggttttgt	tttgggtttt	gggtgatagt	2160
atttttgtat	attttgtttg	tatgttgatt	attgggtgat	tatgtgtgtt	agtggttttt	2220
tggatgtttg	tggattttat	tgggggtttt	tgagtggtga	tgggggtgat	gagtggttgt	2280
gtgttgagtt	tgtgggtatt	tttttggtgt	gtgatagttg	ttagtggaa	tgtttttttg	2340
tttttagtgt	gaagatgggt	ttgggattta	tgagtatttg	tgtgtatttt	taggttggtt	2400

gttttttattt	ggatggtagt	tgtgagagtt	ttgattgttt	ttttgagttg	ttggagttatt	2460
atgtgggtggt	gttgtgttgt	atgttggggg	ttttgttgtg	ttagtgttgt	gtgtgggtgt	2520
tgtaggagtt	gttgtgttag	tgtattgttg	ttattgtggg	ttgtgagaat	ttggtttgta	2580
tttttttttaa	ttttgttttt	tgtgattatt	tgagtttttt	tttttttttag	atttgatttg	2640
tagtggttgt	tgtgtatgta	gtattaattg	ggatgttgtg	ttatttttgt	attattttgt	2700
tgggaattatg	tgggtatttt	ttttggtttg	gggtggaggg	agtggatggg	tgtaggggtg	2760
aggtgttttt	tgttttttgt	tggagatgag	gtttagattt	tttttttatt	ttttgagggg	2820
gttttttttt	ttttggttgt	ttttttgggt	ttttttggtt	gtttagtagt	tttaattgta	2880
tttgaggtta	gga					2893

<210> 46

<211> 5898

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 46

ataatagttt	tgtaaggtag	ggattatgat	tattttttaga	agaggttaaa	taaattgtta	60
aagattatat	atgtagtaag	tggtggtaga	gtgaggattt	atatttggat	agtttaattt	120
taaagttatg	gtgttaatgt	atttatttat	ttatttattt	atttatttat	ttatttattt	180
atttaaatgat	tatatggat	gtttattata	tgtaagaat	tatgtttaag	gtgttgaaat	240
atagttgtga	ataatgtaag	tataaatata	tgaagtagag	ttggggagaa	agtaagttgg	300
agaaataaga	tataaattag	gttagatggt	gaatatgatt	aaggaaaaaa	ttagagtagg	360
gaggaaagag	aaatgtgtag	ggggaagggt	aattttgagt	gagttaatag	gtaaggtttt	420
attaagaaag	tggtattaaa	taaagatttg	aggaagttag	ggagtaaatt	ttgtagtatt	480
ttaaaaggag	agtatgagag	gtagaggaga	tagtaaatat	aaagattttg	aagtaggggt	540
aaggttaaat	agtttttagaa	ttagtaagga	gttttagtga	atttgaatag	agtgattaaa	600
gaatagagta	ggaggaaatg	aggttagaga	ggtaaatagg	ttggagtgtg	gtgggtattgt	660
tttggtttat	tgtaattttt	attttttggg	tttaagtgtg	ttttttgttt	tagttttttt	720
agtagttggg	attataggta	tgtattatta	tatttggtta	atttttgtat	ttttagtaaa	780
gatggtgttt	tattatgttg	gttaggttgg	ttttgaattt	ttgattttta	gtgattttatt	840
tgttttaatt	ttttaaagtg	ttgggattat	aggtgtgagt	tattgtgttt	ggtaggattt	900
tttttaatta	agtatgatgt	agttattagg	gttggagtat	tttaggaaga	gggaatagta	960
tgtattaagg	taataggaaa	gtatataaaa	aaggagttgt	tggaagattt	atttttaattt	1020
attattaagt	aaatattaaa	tttatttgtat	aaaaatgtta	gggttaggag	gggtgggtta	1080
tgttttgtaa	tttgggtattt	tgagagggtt	aggtaggagg	attgggttgaa	tttaggagtt	1140
tgagattagt	ttgatttaata	gggtgaaatt	ttgtttttat	taaaaaatata	aaaattagtt	1200
gggtgtgggt	gtgggtgttt	gtaatttttag	ttttttggga	gggtgaggta	ggagaattgt	1260
ttgaatttgg	gaggtggagg	ttgtagttag	ttgagattat	gttttgtatt	ttagtgtggg	1320
tgatagagg	agattttgggt	atgttttttt	tttggttttt	gttagttttta	ggaataaata	1380
tttttttatt	taagttaaag	tgtgggtata	tttttttttt	aggatttttt	attaaggaat	1440
aagaagttat	attaggataa	tttagagggt	agtttaatttt	agtagatata	gtggttttta	1500
aaaggttttg	ggtttttagat	tgtatatagg	ttttatatgg	aatttgattt	gtttttttat	1560
tttagttttt	tatttagaat	ttgaatttag	ttttttatgt	tataaaaagg	gttagagggt	1620
taaagagggt	aagtgttttg	tgtaaaatta	tttaattatt	ttgtagagga	ttttaattag	1680
ggtttagtta	gttttgttta	tattataaaa	ggtttttttt	aaaaaatgaa	atatgattaa	1740
gggtatatgg	tttttagtgtt	aataaaagttt	tttggttagtt	gggaaatgtt	tttttttttg	1800
atttattttg	ttattatttg	tatagaatta	tgtattttaa	agtaggaaaa	ttattgagaa	1860
aattatttgt	ttttggttgt	agatttttaag	gttgggagtt	ggtttttgtt	tttttttttaga	1920
gttggttaggg	gggttattag	gtaaagtttg	taagatgtgt	tttttttttt	tttttttttt	1980
ttttttgttt	aatttttttat	agttgtgggt	tttaattaaa	gtgggtattg	atttttttaag	2040
tttttgagta	gtgatgtaat	agaatagtat	tttaaagaaa	aatgtttatt	gaaatttttg	2100
atttggtttt	tttgtgattg	tttaagggttt	tttttaaaaa	gtagggttata	ttttaagtag	2160
gttatatttt	gggggtgggt	gtgtagataa	ggagatgagt	ttttattaag	gttaggggggt	2220
ttttaatggg	gttgagggtg	agaatttttag	gtagggttaga	gggtgttgaga	tttttttgaa	2280
tttttagtttt	gggggtgttag	ttttgtaggg	aatggtagag	atattttttg	gattgagggga	2340
attgaggtta	gttattaagt	tttttttggg	tgtgtaggta	aggggtgtttt	tttagtagtt	2400
ggtgtagggt	atttggggtg	gttggtgggt	ttattggaga	tgttgagtag	gagggggagg	2460
ggaagggagg	agttgggtgg	gtgtgggtga	taaggagttg	gagtgttagg	gggaggggat	2520
taaggatggt	tggtgttgtt	taaggagggt	ttgttttttt	gtttgttgtt	ttttaggatt	2580

tgattaaggg	gattgttttt	ggtttttgg	tgtgggtatt	gggatgagta	tgggtgtttt	2640
atgttattga	tgtgttttag	agtggagag	tttgggtttt	gaggatttat	agtgtttttt	2700
gtatgtttat	tttttgtaaa	agtgtggtta	ggaggggtgt	attgaggggg	tgttgttggg	2760
atgttttagag	gaatttattt	ttgtggtagg	ttaagggtta	aggattgtta	tttttttttg	2820
aatttgggtg	tttagttggt	ttgggtaggg	ggtaggtttt	ggttgttgaa	atgggggttg	2880
ttgtagttag	tgggtgggga	gatttttagt	tttgttttga	gtattttggg	gtgtgggggt	2940
agaggtagg	tgattttggt	gtgtatattg	tttgttttgt	atgtttagt	ttttatttgg	3000
ttttttttga	agtgtgtga	ttgtgattga	gttttttttaa	agtagtagtg	gggtttgtgg	3060
ttatgtgagg	ttgatttttg	gaaagttttt	ggaaagtgt	ttttgtagta	gttgggtggg	3120
gtgtgagtgg	agtgttgatt	ggggagggag	gtggggagta	agggaggtgt	gttgggttgg	3180
gaagtgtgt	gtattttgtg	tttttgggat	tgatgtttaa	tttttgttaa	gttttgttgt	3240
agtgttgtg	gttgggtggg	tttgggtttt	ttttgaagta	tgagtttttt	tgtttgtagt	3300
tattttttatt	gtgtggtttg	tggatagtgt	gtgttggggg	tttgggtgta	tagtttttag	3360
atattttgtg	ttttagtatt	gggtgtttgt	ggtaggtatt	ggtagtgggg	gaagtttgaa	3420
ggttttgggt	tgaggagagt	tattggggag	gggtgtgagg	tgtggttgtg	tgtgttgggg	3480
agtgggtgat	gggttgggtt	ttttagattt	ggagtgttgg	ggaagagaga	gtttgaattg	3540
tgggttttgt	ttgtggttta	gtgttgttgt	ttgttttttt	tagttttttt	ttgggttttg	3600
gaagtgtttg	gagttttttt	tttttatttt	ttttaaattg	ttattttaa	taataatttt	3660
tttaataatt	tgattttttt	ttttttttta	ttgggttgtt	ttttgttttt	gttttttttt	3720
tttttttttt	tttttttttt	ttttttttta	gggttgtagt	tggagggaaa	tttggtagta	3780
gtttgagagt	ggaggtgttt	tagtttgttag	gggtgttgt	tgtgtggttg	gggatgggg	3840
tgaggtaatg	atttttgagg	tttttgttgt	tttttgttgt	atggaaattt	gattgttgtt	3900
tttagtgtg	gggttgggtg	tatttttggg	tattttgttt	ttaaattaaa	tgttaattgg	3960
ggaaataagg	gtagatgttt	tttttttttt	gggttttttt	tatttttttt	ttttttttta	4020
tttttttgtt	ttatgttgtt	tgaggagggt	gtttggttgt	gaggtgggtg	tgggtgttgt	4080
gggtgagggt	gaggttaag	tgtggttgtg	gtgggttgtg	ttttttgtag	tgttttgtat	4140
tgtttgttgt	gttttgggtt	tgttttggag	ttttgtgagg	gttgtgttgt	tgggttgatt	4200
ttttgatagt	gtttgtgggt	gtgagaatta	ttgtagttaa	tttgggttgg	gagtgttgtt	4260
tgtggtattt	tttaatttgt	tagagtgggt	attaggaagt	ggggggagg	gagtggagg	4320
ttttttgggt	ggagatgtgg	tagtttttgt	atttttgtat	tttgggttgg	tgttttgggg	4380
ttttgtagt	ttttagggtg	gagaattaa	tttgtgtggg	tgtttttttt	tgggggtttt	4440
tgggttgtgt	taggtgtgag	attggaatgt	taatttgggg	aatttttttt	gttttttttt	4500
ttttaatttt	ttttatttgt	ttttgataag	ggtttatttt	tattggattt	gtaggtgatt	4560
atttgttttt	tttaggttgt	tagtttttga	ttttagttag	tgatttttgg	tgggaagata	4620
ttttgtttat	tttttttttg	atttttgttt	tttatttttt	tagttaattt	tattttggat	4680
ttttgttttt	tttatttttt	tttttagagt	gggttaggg	gttaatttga	agtttgggg	4740
taaagtgtgt	aggaatgtag	aggtggagga	gttttttggg	ttttttatgt	ttattttttt	4800
atttttattt	tagttgtagg	ggtttagttt	ggattgattt	aattttttgt	tttttttttg	4860
taggtgatta	gtgggtgatt	gtggttgtga	gggattttgt	tatttgtttt	ttaggatttg	4920
gggagaaaga	gttttatttt	tttttttttt	gttattattt	tggatatttt	gtagggattt	4980
gttttgggat	ttgtattgat	tttaaggaag	gatgtgaatt	tttttttgat	tttagtttgg	5040
gtggttattt	gtttttgttg	tgggtgattt	ttttttatga	ttttgtggtg	ttttgagttt	5100
tttgggaatg	gtggggaagg	gatgtggagt	tagtggggga	ttgtgggggt	ggtggaggag	5160
ttatttttgt	aggtggtgtg	tttgggtgaag	gttttgtggg	agtttgggtt	gataggtagg	5220
gagttgattg	gttgtgatgt	gtgtgggagg	gagtgttttt	tttaaggaag	agtttaggaag	5280
tgggggttgag	gtgggaagta	aagaataaga	tggaaatatg	ttttttgttt	tttaagggatt	5340
gtggagagta	tgtttgtagg	gttttgggtt	tttgggaatg	tgttaaggaaa	gtgttttttt	5400
agggattttag	gttttgggtg	gtgtagagt	tgggaagagt	tttttggaaa	tagtttttta	5460
gtatgttgga	agatttattg	ttttttgtag	ttgtttagg	ttagggtttt	gggtttgaat	5520
tttgggttgg	gaaagtgttg	ggtgtttttt	tttgtatggg	gtgtaattag	taagtgtgtg	5580
ttgtgggttt	tgtaggttta	gtagtatttg	gtttttgggt	ggagttgttg	ttgtagttta	5640
ggatttttgt	ggttaagt	agggattgat	attgttgtga	gggtgggtgt	ttgggtgttg	5700
agagtaggtt	gtgaagt	tgttgagtgt	ggtttttatg	gttgggtgtg	ttagggtatt	5760
gttgttttta	agtatagtta	ggttaattgt	gtggtatgtt	gttttttaggt	atttgaaaaa	5820
agaaaaaga	aaaaaagtaa	agtatttgg	aaattatttt	ggttttttaa	atttgtattt	5880
taaaagttta	tagtttgtg					5898

<210> 47

<211> 5898

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 47

tataattgta	agtttttagg	atatggattt	ggaaagttag	aatgatttgt	tagatatattt	60
atTTTTTTTT	TTTTTTTTTT	TTTTtagatgt	ttagagatag	tgtgttgtgt	gaattgtttg	120
attgtatttg	aaagtggtag	tattttgggt	gtgttgatta	tggaagtgtg	gtttgggtggg	180
ggttttgtag	tttatttttg	atgtttgggt	agttgttttt	gtggtagtgt	tagtttttga	240
atTTTggttg	taagattttg	ggttgtagtt	gtagttttgt	ttgggagtta	gatgttggtg	300
ggttttgtggg	gttttgtggt	ttgatttggt	gattgtattt	tgtgtaaagg	gaggtggttg	360
atgtttttttt	tgggtggggg	ttgagtttgg	gagtttaatt	ttgagtagtt	gtggaaaata	420
gtaaatTTTT	tagtggtgta	agaagttatt	tttaagaagt	tttttttgtg	ttttgtgttt	480
tgttaggttt	gagtttttgg	agaattattt	tttttatgta	tttttaagga	tttaggattt	540
tgtgagtggt	ttttttgtgg	ttttttggaa	gtaagggatg	tattttttatt	ttattttttg	600
tttttttattt	tgatttttgtt	tttttagttgt	ttttttgggg	aggtgttttt	ttttgtatgt	660
gttgtgggtg	attgggtttt	tattttgtttg	attgagtttt	tgtagggttt	ttgttagatg	720
tgtttgtttg	ggggatgggt	tttttgttga	ttttgtggtt	ttttattggt	tttgtgtttt	780
ttttttgtta	tttttggagg	gttttaaggta	ttgtagggtt	atgagagaag	ggttattgtg	840
gtaaagatag	gtggttggtt	gagttggggg	tagagaaggg	tttgtgtttt	tttttgaagt	900
tagtgtgaat	tttaaaatga	gtttttgtgg	ggtgtttgaa	atgggtggtag	agagagaagg	960
gatgggggtt	ttttttttta	gattttggag	gatggatgat	aaagtttttt	gtagttgtgg	1020
ttattttattg	attgtttata	aagagaaagt	gggaggttgg	gttagtttaa	attggatttt	1080
tgtgggttggg	gtgggggtgg	ggaaatagat	gtggaaaatt	ttagggattt	ttttgttttt	1140
atgtttttgt	attattttaat	tttaagtttt	tagtttagtgt	tttgggtttg	tttttagagaa	1200
aagataaaga	gagtagagat	ttaagataaa	gttggttgaa	gaggtggggg	gtggaggtta	1260
ggaggagggt	gaatagggtg	tttttttgtt	tagggttatt	agttgaaatt	aaagattggt	1320
gatttaggaa	gagtaaatag	ttatttgtag	atttagtggg	aataaggttt	tgttaaggat	1380
aagtagaaaa	aattaaaaag	gaaagaatag	gagagatttt	ttaaattggt	attttgggtt	1440
tatatTTTgt	gtagtttgag	ggtttttagg	aagaagtatt	tatatataatt	tggttttttg	1500
ttttaaaagt	ttgtgggggt	ttgaggtatt	aatttggggg	gtggagggtg	gggagttgtt	1560
gtattttttg	ttgggagggt	ttttgttttt	ttttttttgt	tttttgggtg	ttgttttggg	1620
gggggttggg	gtgttgtggt	ggttgttttt	ggattaggat	ggtttgtggt	gtttttgttg	1680
ttgtgggtgt	tgttgaggaa	ttgggttgag	tgtgtagttt	ttgtgggggt	ttgaggtgag	1740
gttgggggtg	agtgggtggt	tgtgagtggt	gtggaaaatg	ttaaattatta	atgttgtgtt	1800
tttattttga	ttttgggtgt	ggttgttggt	gttgtttttg	tatttaggtag	tttttttagt	1860
ggatatgggg	tgggggggtg	gggggaaaag	gggaggtggg	aggggttttg	gagaggaggg	1920
gtgtttgttt	ttgttttttt	tgttaaatgtt	taatttggga	atgagatgtt	tggggatgta	1980
attagttttg	tgtttggagg	tgggtggttg	agttttgtgt	gtagagggtg	tataaaagtt	2040
ttgaggatta	ttgttttgat	tttatttttt	attgtgtggt	gatgtttttt	atgggttggg	2100
atatttttat	ttttggattg	ttgttgggtt	tttttttggg	tgtgattttg	gaggtgggaa	2160
ggagagaggg	agggaggggg	gaaggagtga	gggtgggagg	taggttggtg	gggaggagtg	2220
ggagattagg	ttattaggag	gattattaat	ttgaatggta	gttttagggg	aataaaaaaa	2280
agaaatttta	gatattttta	gatgttgaga	aggggttgga	gaaagtagg	agtaagtta	2340
ggttgtgggg	tagagtgtgt	gtttggattt	tttttttttt	ggtgttttga	gttgtgggaa	2400
tttaggtttt	ttgttgtttt	ttggtgtatg	tgggtgtgtt	ttgttgtttt	tttttgtaaat	2460
tttttttggg	gtggagtttt	tgggtttttt	ttattatttg	tatttgttgt	gggtgtttga	2520
gttgtgggta	tgggggtatt	tgagggttgt	tatttgggat	tttgggttgt	attgttttgt	2580
ggttatgttg	tgagggtggt	tgtgggtgag	aggggtttat	tttttagggg	agtttaagg	2640
ttgttagttg	tgggtggtgt	gatgagattt	ggtaagagtt	aaatgttgg	tttaggagta	2700
gtgagtggtg	gtgatttttt	agattgatgt	gttttttttt	ttttttgttt	ttttttttag	2760
ttagtgtttt	gtttgtgttt	tgtttgggtg	ttgtggagg	ggttttttag	gaatttttta	2820
ggaattgggt	ttatgtgatt	gtgggttttt	ttattgtttt	aaagagggtt	ggttgtaata	2880
tataggtttt	aggggaagatt	gggtgagagt	gtttgggtgt	aggggtgggtg	gtgtgtatgt	2940
tgggttgggt	ttgttttttg	ttttataatt	tgggtgtgtt	gggtgtaagt	tagagatttt	3000
tttgggttatt	gggttatagtt	aattttgttt	tgggtggttg	agtttgtttt	ttatttgggt	3060
tagttgagtg	tttgggttta	gggaaggata	gtgatttttg	gtttttgggt	tgttatgggg	3120
gtgggttttt	ttaaatat	tgggtggtgt	tttttgatgt	gatttttttt	gttgtatttt	3180
tgtggggggg	gggtgtgtag	gagtgattgt	gggttttttg	aaatttagatt	ttttgggttt	3240
aagatatatt	gatggtgtgg	ggatgttgtg	tttgtttttg	tgtttatgg	tggggattgg	3300
aggtggtttt	tttgattagg	ttttggaagg	tagtgagtgg	gagagttagt	tttttttaag	3360
tgggtgtggg	tgttttttagt	tttttttttt	tgggtgtttg	gtttttttgt	atttgtattt	3420
atttgggttt	tttttttttt	tttttttttt	ttttaatgtt	tttggtagat	ttgggtggtt	3480
gtttgggtta	tttgtgttgg	ttgttaaggg	ggtgttttta	tttgtgtgtt	tgggaagggg	3540

ttggtgattg	gttttggttt	ttttagtttg	gagagtgttt	ttgttatttt	ttgtagggtt	3600
gatgttttag	ggttgggatt	tggaaggatt	ttggtatttt	tattttattt	gggattttta	3660
tttttaattt	tgttggaggt	tttttggttt	tagtggaatt	ttttttttt	gtttgtgtat	3720
ttgtttttga	aatatgattt	atttgaaatg	tgatttattt	tttaaaagaa	atttttaata	3780
attatgggaa	aattggattt	aaaattttga	taagtatttt	tttttgaaat	attattttat	3840
tgtattattg	tttgaaagtt	tgaaagggtt	atgggtattt	ttagttgagg	ttgtggttat	3900
gggaagttgg	gtgaggaagg	gggaggggtg	ggagggaggt	gtgttttgta	aattttgttt	3960
ggtgtttttt	ttgttggttt	tgggaggaaa	tgggaattag	tttttaattt	tggggtttgt	4020
agttggggat	taatggtttt	tttaataaatt	tttttgtttt	tgagtatata	attttatgta	4080
gatgataagt	agatgagttg	gggagggggg	tatttttttag	ttaataaaga	gttttgttaa	4140
tgttggagtt	gtgtgttttt	aattatgttt	tgtttttttag	aaagagtttt	ttatagtgtg	4200
ggtggagttt	attgaatttt	agttaaaatt	ttttataaag	tagttgaata	attttgtata	4260
aggatattat	tttttttggg	tttttggttt	tttttataat	atgaagggtt	agatttgggt	4320
tttgggtgag	ggattgggat	aaaggaataa	attagatttt	atgtgaagtt	tgtgtatagt	4380
ttgaggtttt	aagtttttta	agaattatta	tgtttattag	ggttaattgt	tttttaaatt	4440
gttttaatat	ggttttttat	tttttgatgg	agaatttttag	aggaagggtg	tatttatatt	4500
ttagtttaaa	taaaaaggta	tttattttta	aaattgatgg	aggggtggga	gggagtatga	4560
ttaagttttt	ttttgttgtt	taggttggag	tgtagggtgt	gatttttagt	tattgttaatt	4620
tttgtttttt	aggtttaagt	aatttttttg	ttttagtttt	ttgagaagtt	gggattatag	4680
gtgtttatta	ttatgttttg	ttagtttttg	tatttttttag	agagatgggg	ttttgttttg	4740
ttggttaggt	tggttttgaa	tttttgggtt	taattgattt	ttttgttttg	gttttttaaa	4800
gtgttgggtt	tataggtgtg	agttattttt	tttggtttta	atatttttat	atagtaagtt	4860
taataatttat	ttgatagtgg	gttgaaatga	atttttttagt	aatttttttt	ttatgtgttt	4920
ttttgttgtt	ttggtgtatg	ttgttttttt	tttttagaat	gttttaattt	tgatggttgt	4980
attataattt	attaaaagaa	ttttgggttg	gtgtgggtgt	ttatgtttgt	aatttttagta	5040
ttttgggagg	ttgaggtggg	tggattattt	gagggttagga	gtttaagatt	agtttgggtt	5100
atatggtgaa	atattgtttt	tattaaaaat	ataaaaaatta	gttgggtgtg	gtgggtgtatg	5160
tttgtaattt	tagttattag	ggagattgag	gtaggagaat	tgtttgaatt	tgggaggtgg	5220
aggttgtagt	gagttgagat	ggtgttattg	tatttttagtt	tgtttatttt	tttgatttta	5280
tttttttttt	ttttgttttt	tgattatttt	gtttaagtta	tattggattt	tttgttaatt	5340
ttagaattta	ttagttttgt	ttttgtttta	gggtttttgt	atttgttgtt	ttttttattt	5400
tttatgtttt	tttttttagat	agttgtaagg	tttatttttt	tattttttta	aattttttatt	5460
taatgttgtt	tttttagtga	gattttgttt	gttggtttat	ttagaattga	tttttttttt	5520
gtatattttt	tttttttttt	tgtttttagt	ttttttttta	ttatgtttat	tatttaattt	5580
agtttatgtt	ttattttttt	agtttatttt	ttttttaatt	ttgttttatg	tatttgtatt	5640
tgtattgttt	atagttgtag	tttagtattt	tgaatatagt	tttttagtat	tagtaggtat	5700
ttaatataat	tattgaatga	atggatggat	gaatgaatgg	atggatgaat	gaatgaatgt	5760
attagtatta	tggtttttaa	gttaagttgt	ttaggtatga	atttttattt	tgttattatt	5820
tgttatatat	gtgatttttg	gtaatttatt	tagttttttt	tggagatgat	tatgggtttt	5880
attttatagg	gttgttgtt					5898

<210> 48

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 48

ttgttgtata	gaatattttt	ttatttaggt	attatgttga	gtattttaata	gttttttttt	60
ttgttttttt	tttttttttt	attttgtatt	ttggagttta	ttatagtgtt	tgttgttttt	120
ttgtttgtgt	tataagtttt	tattatttag	tttttattta	taagtgaagaa	tatttagtat	180
ttggattttt	gtttttgtat	tagtttgtta	aggataatag	tttttagttt	tttttagttt	240
tttataaaaag	atatgattta	gtttttttta	atgggtgtat	taaatgaagt	tttaaagata	300
taatatataat	attaatattt	tttttattat	aaaaattttt	tgttgaattt	gatttatatt	360
aaattaatga	gttttgtttt	atgaaagatt	ttttggataa	atttgatagt	tgatggaata	420
ggagaagttg	tttgttatgt	ttaaagttta	taagagatta	atatttagaa	taaatggaga	480
tttgtaaatt	aatagaaagt	aggtagtaaa	gttaaagaaa	atagtttaag	gtatagttat	540
taaaaggaat	gtgattatgt	tttttgtagg	gatattgggtg	gagttggaag	ttgttagttt	600
tagtaaaatt	atataggaat	agaaaattag	tgagattgta	tggttttatt	tataagtggg	660
agttgaataa	tgagaatata	tggttatatg	gtggtgatta	atatatattg	gtgtttgttg	720

agtggggtgt	tggggaggga	gagtattagg	aagaatagtt	aagggatatt	gggtttaata	780
tttgggtgat	gggatgattt	gtatagtaaa	ttattatggt	gtatatattt	atgtaataaa	840
tttgtatatt	ttttatatgt	attttagaat	tttaaataaa	agttggatgg	ttaggtgtgg	900
tgggttatgt	ttgtaatttt	agtatttttg	gaagttgagg	tgtgtagatt	atttaagggt	960
aggagtttga	gattagtttg	gttaatatgg	tgaaattttg	tttttattaa	aaatataaaa	1020
attagttaga	tgtggtatgt	atttataatt	ttattttattt	gggagggttga	agtagaattg	1080
tttgaatttg	agaggtggag	gttgtagtga	gttggtgaga	ttgtgttatt	gtatttttagt	1140
ttgggttata	gtgtgagatt	atgttataaa	ataaaaataaa	ataatataaa	ataaaaataaa	1200
ataaaaataaa	ataaaaataaa	ataaaaataaa	ataaaaataaa	ataaaaaaat	aaaaataaaat	1260
aaaataaaaat	aaagtaattt	tttttttttt	aagtggtttt	tattttttttt	ttttgttttg	1320
tgaagtgggt	gtgtaagttt	tgggatttga	gtgggttttag	ggaattttttt	tttgtgatgt	1380
tttgggtgtg	tagtttggtg	tgtatatttt	gttggtggtt	ttttttgttt	gtttgtttat	1440
tttttagggt	ttgttgggga	tttgggaaag	agggaaagggt	ttttttggtt	agttgtgtgg	1500
tgattttggg	gatttttaggg	tgtttttttg	tggttgatgt	ttggggtgta	gtggtgtgtg	1560
gggttgggggt	tgggtgggagt	ttgtgggatt	ttttagaaga	gtggttgggt	ttgtgattta	1620
gtattgggggt	ggagtgggggt	gggattattt	ttataagggt	tggagggttgt	gagggtttttg	1680
ttggagtttt	gttggtttag	ttttgttat	tagtgagtat	gtgtggtttg	tgtttttggg	1740
gatgggggtt	agagttttta	gtatgggggt	aatttgtagt	attaggtttg	ggtttttggt	1800
agggtttttt	gtttattttg	agatttggga	tgggggttta	ggggatttag	gatgttttta	1860
gtgttgttag	tgggttttag	ggggtttggg	gtgttttggg	gagggatggg	attttggggg	1920
tggggagggg	gggtagattg	tgtttattgt	gttttggtat	tttttttggg	gttttagtaa	1980
attttttttt	gtttgttgta	gtgttggttt	atattgtggg	ttattttttta	gtttgaggta	2040
ggagtatgtg	tttggttaggg	aagggaggta	gggggttgggg	ttgtagttta	tagttttttg	2100
tttatttgga	gagatttgaa	tttttttatt	tttttgttgt	gtggttttta	ttttggggtt	2160
tttttttgtt	ttttgttttt	tttgttatgt	ttgttttttg	tttttagtgt	gtgtgaaatt	2220
tttggaggaa	tttgtttttt	tgtttttttt	ttgtattttt	gatttttttt	tgggttggtg	2280
tgaggtggag	ttggttttgt	ttttatatatt	tgtatttttt	tttttttgta	gggtgttgtg	2340
tgggttttgt	tattgttgtg	gtagattagg	gttagagttg	gaaggaggag	gtggtgattg	2400
tggagatgtg	gtaggagggt	ttatttaaag	tttttttgtg	aagtgattat	gtttgggtaa	2460
ggggaggggg	tgttgggttt	taggggggtt	tgattaggat	t		2501

<210> 49

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 49

gatttttagtt	atagtttttt	aagggtttagt	attttttttt	tttgtttggg	tatgggttatt	60
tatgtagggag	gttttgagtg	agttttttttg	ttatgttttt	atgggttatta	tttttttttt	120
ttagtttttg	ttttgatttg	ttagtagtat	gtgtagggtt	gtgtagtggg	ttgtggggag	180
ggagaagtat	gagatgtggg	gattgggttg	attttgtttt	gtagtaattt	ggggaggggt	240
taggagtgtg	gggagggaat	agggaaatag	gtttttttga	agattttata	taatattggg	300
gtggggagta	ggtatggttg	gagaggtggg	gaatagggaag	gaggtttggg	gtaaaagtta	360
tatgatggag	ggataagggg	gtttggattt	ttttgggttg	gtgaggggtt	gtgggttgtg	420
gttttagttt	ttgttttttt	tttttgttag	atatatgttt	ttattttgaa	ttgggaaata	480
gattatggtg	taggggtgga	ttgtagttaa	taaagaaaag	tttgttggag	tttgggggag	540
gatgttaagg	tgtggtgagt	gtagtttgtt	tttttttttt	gtttttgggg	ttttattttt	600
ttttgaggtg	ttttgggttt	tttgaaagtt	gttaatggta	ttggggatgt	tttgggtttt	660
ttaggttttt	gttttgggtt	ttgaggtggg	tgaggagttt	tgttgggagt	ttgggtttga	720
tgttgtgggt	tgggttttat	ttgggagttt	tgagttttat	ttttggggat	gtgggttgtg	780
tgtatttatt	ggtggtgaag	attgtggttg	tgaaatttta	gtgaagggtt	tgtggttttt	840
gagttttata	aggggtgggtt	tgttttggtt	tgttttagtg	ttgagttatg	gtgttgggtg	900
tttttttgga	gggtttttgt	gattttttgt	ggtttttagt	ttgggtgggt	ttgtattttg	960
ggtgttgggt	gtagaggggt	gtttttggag	ttttggagtt	gttgtgtagt	tgggtgggga	1020
agtttttttt	tttttttttag	gttttttagt	gggttttagg	agtaaataga	tagtaggaag	1080
aggattgtag	tgaagtgtgt	gtagtgaatt	gggtgtgttg	gatatgtgtg	gggaaaattt	1140
tttaagattg	ttgtgatttt	ggagtttgta	tatttgtttt	atagggtagg	ggagaggggt	1200
ggaggttgtt	tagaggaaag	gaaattgttt	tattttattt	tattttattt	tattttttta	1260
ttttatttta	ttttatttta	ttttatttta	ttttatttta	ttttatttta	ttttgtgtta	1320



ttttatttta	ttttatgatg	tagttttatg	ttgtgggtta	ggttggagtg	tagtgggtgtg	1380
attttggtgg	tttattgtaa	tttttgtttt	ttgggtttta	gtaattttgt	tttagttttt	1440
tgagtaggtg	gaattatagg	tgtgtgttat	atttggttga	tttttgtatt	tttagtagag	1500
atgggggttt	attatgttgg	ttgggttgg	tttgaatttt	tgatttttagg	tgattttgtat	1560
gttttggttt	tttaaagtgt	tgggattata	gggtgtgagtt	attatgtttg	gttgtttaat	1620
ttttatttga	agttttgggg	tatatgtaga	ggatgtgtag	gtttgttata	taggtgtgtg	1680
tgttatgatg	gtttgttcta	tagattattt	tattatttag	gtattaaagt	tagtattttt	1740
tagttatttt	ttttggtatt	tttttttttt	agtattttgt	ttaataggta	ttagtgtgtg	1800
ttgattgttg	ttatgtgatt	atgtgttttt	attgttttagt	ttttatttat	aagtgtgatt	1860
atgtgggttt	gttgggttttt	tgtttttgtg	tgagtttgtt	gagggttaatg	gttttttagtt	1920
ttatttatgt	ttttgtaaag	gatatgatta	tgtttttttt	agtgtgtgtg	ttttagggtta	1980
ttttttttgg	ttttgttgtt	tattttttgt	tgatttttag	atttttattt	attttagata	2040
ttgatttttt	gttgggtttta	gatatgatag	atagtttttt	ttattttatt	aattgttaag	2100
tttgtttaag	gagttttttta	tgaataaaaa	ttgtttaatt	taagtgaat	taaatttagt	2160
aagggttttt	tgtgggtggg	aagagggttg	tgtttatgtt	gtatttttaa	aattttattt	2220
aatgtagtta	ttaaaaagaa	ttagattatg	ttttttgtgg	gaatatggat	ggagtttagag	2280
gttattattt	ttagttaaatt	aatgtaggaa	tagaaattta	aatattggat	gtttttattt	2340
gtaagtggga	gttaaagtat	gagaatttat	aatataaata	aggaaataat	agatattgtg	2400
gttgatttta	gggtgttaga	tgggaggaag	gagaggagta	gaaaagagaa	ttattgggta	2460
tttggtataa	tatttggttg	atgaaatatt	ttgtataata	a		2501

<210> 50

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 50

tttggaatttt	aatgtgtatt	ttatatttat	agtataatta	atttgggatt	agttatatatt	60
tagtttaata	atagtttaata	gtatattggga	tagtgtaaatt	aaattttgtg	tttttggtgt	120
ttttttgggt	tttgagagatt	tttaatttttt	tttttagattg	ttaatttttt	tgtttttaag	180
ttttgggttt	aatatttagtt	tggttagagga	attttagttta	atgaggtatg	tttttttttt	240
gttatttttt	attttatttaa	tttgttttgt	ggtaaatgta	ggattgattt	tttaaaatta	300
ttttattaat	tagttttatat	atttattatt	tattttgttt	attagaatgt	aggttttttg	360
aaggtaggga	tttaaaaaaa	tttgttttgt	tttatgtgat	ttttttatat	taagtattgt	420
gtttgggtata	agttgggatt	ttagtataa	ttttgggatg	gaagaattgt	gttttttttag	480
aattttagtt	gaggttagtt	tagtaattgt	ttatagggtg	gggtgttgtg	ttttgggtgg	540
atgtatttgt	tttttggttg	gtgtgggtgt	gggtgtgagtg	gggtgtgtgtg	gggtgtgtgt	600
ggtagagtgt	gttagtgagt	ttggagtgtg	gagttgggag	gagtagtgag	tggtgtgtag	660
aattttgtagt	gttgggtttg	tagggtagtt	tggaggtggg	tgggttgtgt	tggttagttt	720
ttttaggggt	ttttatttgt	tggtttgttg	ttgttttttg	tttaaaaggt	ggtaaggagt	780
tgagaggttg	ttttggagtg	tgaggaggat	agttggattg	agttaatgtt	ggggattttg	840
ttttttttgt	ggaggggatt	tggtaatttg	tagtggtagg	gtttgggggt	gggttttggg	900
agggaatttg	gttttttatt	tatttttttag	ttgtgttttt	gttgtgtttt	tggttagttt	960
ttgtgtttgg	tggttatggg	tgggttttga	tagtgttttg	gagggatttg	gggagttttt	1020
aggtgttttg	gtgagtagtt	aggtgtgggt	ttttgggttt	tttgattttt	gggtgttagtt	1080
tttggttttt	tagtttaggt	gtgggtgggt	ttgtttgggt	agtgttttga	gtaattggga	1140
aggttaaggt	ggagggaaat	ttgggttttg	ggagaagtgt	gattgttagt	gggaggtttt	1200
tttagttttg	tgggttgggt	gagaatagg	gggtgttggt	tgattagggt	ttttgtgttg	1260
gggtgtgagg	atttggagtg	aattgttgtg	ttttgggtgg	ttgttttttt	tttttttttg	1320
ttttttttgg	tggttgtatg	ttgggttgg	tgggtaatgg	agagggagtt	gttaggaatt	1380
tggtttttgg	gattgttttt	ttgggggaag	gggagagggg	gggtatgggt	ttaggagagg	1440
tgtgggaggt	gagaggtgtg	gtgggggtgt	tattgttgtt	gtaggttggg	gagagattgt	1500
tttttagtgag	gtgtgtattg	tttgggtgag	gggtttattt	ttttgtgggt	tttttgagg	1560
tgggaaagt	gggtgggtat	gtgtgttagag	aaaggggagg	tggggaggtt	agttattttt	1620
ggagttgggt	ttgattttta	tagattgttt	agtgtttggg	gatgttgatt	ttgggtgtgt	1680
gtgggtgttt	gttttatgtg	tgtgtgggt	tgaggggttg	gggtgttttt	tggttgttta	1740
gttttaataa	aggggtgttt	tttttatttt	gtgaggagg	gtagtttttg	agattttgg	1800
tttagtgagt	gggttttttag	tgttggggag	gtttattttt	ttttgggggt	gttattttat	1860
tattattatt	gttttttttt	tttttttaaa	aggattggag	attgatgtat	gaggggggtta	1920

tgagggtgta	ggagtgggtg	tgatgggttg	ggaagtggag	ttgaagtgtt	ttgggttttg	1980
gtgagggtgtg	atagtttatt	atgattgtgt	ttaggtagga	aaatgtggat	gattattatg	2040
atattgggtga	ggaatttggg	aggtaaagg	ggtattagaa	gtgtattttt	ttggattgtg	2100
gaaatgtata	atgatggggg	tattgggttg	taaataaatg	tagtttgaat	taggtgtttt	2160
ttttgttttt	tttggagatg	tgtaaattat	agagaaaaga	gttattaatt	tagtggtaaa	2220
ttgtttgatt	taagggtttg	gggggtggag	agaggtagta	gtttagggtt	agattatgat	2280
gtatagtata	ttgatttagt	tttttggata	aaattagatt	taattgtttg	tgtaattttt	2340
tgtttagtttt	tgtttttttg	tgataatagg	ataaatatta	agattataat	tgtaattgga	2400
gttagttttt	atgtgtgatt	taaatggagg	gtataaatta	attaataggt	tttaaaaatt	2460
ttagtatttt	attttttatt	taaattttta	gtgtaatttg	a		2500

<210> 51

<211> 2501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 51

ttaaattata	ttgaaaattt	agatagaggg	taaagtatta	agatttttta	aattttattaa	60
ttagtttgta	ttttttgttt	aaattatata	taaaagttaa	ttttaattgt	aattataatt	120
ttagtgtttg	ttttgttgtt	atagaagggt	aagggttgat	aagagttagt	atggataatt	180
aaatttgatt	ttgtttagg	gattggatta	atatattgtg	tattataatt	tagttttgaa	240
ttgttggttt	ttttttattt	ttagggtttt	ggattagggt	gtttattgtt	gggttagtaa	300
tttttttttt	tatgatttgt	gtatttttag	aaagggtgag	ggagatgttt	gatttaaaat	360
gtatttggtt	attatttaaat	ggtttttatt	ttatgtattt	ttataattta	ggagggtatg	420
tttttgggtat	tttttttatt	tgtaaggttt	tttgttggtg	ttgtagtaat	tatttatgtt	480
tttttgtttg	aatatggtta	tgataaattg	ttatgtttta	ttaaagttta	gggtattttta	540
gttttgtttt	ttagattatt	attattgttt	ttgtgttttt	gtagtttttt	tatgtattag	600
tttttagttt	ttttgaagaa	aaaaaaaagg	taataataat	agtaaaatgg	taatttttaaa	660
aggaagtaga	tttttttggg	gttaagattt	tgtttgttga	agattgggtt	tttggagttg	720
tttttttttg	tgggggtggag	aggagtattt	tttgttaaa	ttgggtgggt	agggatgttt	780
ttgatttttt	agtttttgtg	gtgtgtgggg	ttgggtatta	tggtattttg	aggttgggtg	840
tttttaaagt	tgggtgggtt	gttgggatta	gaattgggtt	tggaaagtga	tggttttttt	900
gttttttttt	tttttgtata	tatgtttatt	tagttttttt	atttttaggg	atgttgtgga	960
agaatgaagt	ttttgttttag	atgggtatgt	ttttattggg	agtaattttt	tttttagttg	1020
tggtaatggg	ggatattttt	tgttattttt	tggtttttgt	gtttttttta	atatttgggt	1080
tatttttttt	ttttttttga	gtgaggtagt	tttttagagt	atatttttgg	tgattttttt	1140
tttgttattt	ggttgatttg	gtgtgtgggt	gtttggggga	gtaaggagg	gaaggagggt	1200
gtttattgag	gtgtagtagt	ttgttttaga	tttttgtgtt	ttgatataaa	gtgtttgggt	1260
gggttgggtg	tatttgtttt	tatttgggtt	gtgggggttg	ggaagttttt	tggttgtgat	1320
tgtatttttt	tttgaagtta	agtttttttt	tgtttttggg	tttttagttg	tttgagggtat	1380
tgtttggata	aaattttatt	tgtttttggg	gggaaagtaa	aagtttgggt	tgggggttgg	1440
ggggattggg	gagtttgtgt	tggttattta	tttgggtgtt	tgggagtttt	tttgggtttt	1500
ttggagtgtt	gttggagggt	gattataggt	gttagtgttg	gagattagtt	gggttgggtg	1560
tgggaatata	gttagggagt	gagtgggggg	tgtagatttt	tttttaggtg	tggttttaga	1620
ttttgttgtt	gtgagttgtt	gagttttttt	tgtggaggga	ataaagtttt	tggtgttggg	1680
ttgggttggg	tgtttttttt	atattttgaa	gtagtttttt	ggttttttgt	tgtttttttg	1740
gtggagggtg	gttggtaggt	ggttaatggg	gattttttaa	gtgggttggg	ggtgtgggtt	1800
atttattttt	gagttgtttt	gttaggttgg	tggttgggtt	tttgtgtggg	gtttgttgtt	1860
tttttttagt	ttgtgttttg	ggtttgttgg	tgtgttttat	ttgtgtatatt	ttgtatatat	1920
ttatttgggt	tatatattat	ttgggttggg	agtttagtgt	tttgtttgga	atgtgggtgt	1980
tttatttgtg	atataattgt	aagtgttttt	ttgattgggt	tttagggaaa	tatgggtttt	2040
ttgttttgag	atgtgtattg	ggatttttagt	ttgtgttggg	tatggtgttt	ggtatgggaa	2100
aattatatag	aataaaatag	atttttttaa	atttttgggt	tttggaaatt	tgtatttttg	2160
tgggatagat	agataataaa	tatgtaaggt	aattaataag	gtaatttttg	aggattagtt	2220
ttatgtttat	tatgaaatag	gttaatggaa	tagagaatgg	taggaaggga	gtgtatttta	2280
ttagattggg	tttttttgtt	ggattgggtg	tggagttgag	gtttgaagg	aagaagggtt	2340
gtaatttgaa	gaaagggttg	aggtttttga	gattttaaaga	agtaatatag	atgtagagtt	2400
tatttgtgtt	atttttatat	ttattgggtt	ttgttgagtt	gaaatgtagt	tagtttttaa	2460
ttaattgtgt	tgtaagtgtg	aaatatatat	tagagtttaa	g		2500



<210> 52  
 <211> 4501  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 52

tttatttgggt	ttataggatt	ttttatggaa	ttttggagtt	tttgagggtga	gagggtatttt	60
ggatattatt	gagtttttatt	ttttatttta	ttaaataataga	agtggatggt	tggatagggt	120
aagtgatttg	attaaggtag	gtgtatagtt	atatttgaat	attgggaata	aatttttaggt	180
tttttgattt	tttgttttta	ttttattttt	ttttattttt	ttagaaataa	agtttttatg	240
tgtttttttt	tatagtata	tgtttggaat	gtattagtt	gtaatttagg	aagggaataa	300
aataaatata	taagagataa	atattgttagg	aggataaatt	tgtattgttt	ttgattgggt	360
tagagggtga	ttattattat	ggtagagaat	tatttaatta	gtgtaagtaa	aatttttttg	420
tgggttgggt	attgtataaa	gatttaaatg	aatttgttta	tagatttgaa	aagtagatat	480
gagatttggtg	aatgggttggg	gtttttaagt	ttatagtata	agtatgggtt	atattttata	540
gttttgagga	ttgagttttg	aaaatgggt	agttttttta	tttttttgaa	ttttattttt	600
tttatattta	aaataaggat	gagtagtttt	tgagggtttt	tttatgattt	ttttttttat	660
agatttttagt	atatttataat	ttgatataaa	gagggtggat	atgaatttat	tttttttaga	720
aaagtttttag	gaaagagaat	attagggttat	tttagtaggt	gtgtagatag	gttagataga	780
ttttgaaatt	tatttagttt	tttttagatg	tataatttta	ttattgtttt	tagttgttaa	840
gagaaagtag	gagagtttgt	atattttattt	tttttttttt	tttttttttt	tttgagagatg	900
gagttttatt	ttattattta	ggtagagtg	tagtggtagt	atatttagttt	attgtaagtt	960
ttgtttttta	ggtttatgtt	atatttttgt	tttagttttt	taagtaattg	ggattatagg	1020
tgttttattat	tatattttgt	taattttttg	tggtgttagt	atagatgggg	ttttattatg	1080
ttagtttagga	tgggttttgat	tttttgattt	tggtgattgt	ttattttggt	tttttaaagt	1140
gttgggatta	taggtgtgag	ttattgtatt	tagtttgtat	ttttattttt	attgttagtt	1200
ttagggttat	tttatttagt	ttattaagt	atgttgaaat	attaattttt	atataattat	1260
aggttttatg	atattatgat	attttagatt	atgggtgttt	gttgaagggg	gtgatttttag	1320
taggaggatt	tttttatgta	aggatttatg	gagtttgttg	tttttttttt	ttagggtgag	1380
aattaaattg	tttttatatg	gtgggttagag	gggaattgat	ttagggtttg	aataagagag	1440
aatattttta	ttgaaaagt	tttggaattt	gttgaatttt	aagatattgt	gtggattagt	1500
ttaggatagg	gagtgaaga	aaatttaatta	aaaggttaatt	ttgttatttt	ttagttggaa	1560
aaaagattag	attatatttg	tgttttttata	attaagtagt	tgttggaaaa	aaatgtttta	1620
gatgtttttt	atgagaaaaat	tgttgtttga	agtttagtag	aagttattta	tttgatattt	1680
atatttttagg	taagggtttt	tgttggagaa	aatattggta	ttttggataa	aattgaaatg	1740
tgaaaagaaa	gggaagagag	ggttttttatt	atgtaagatg	tttattttaa	gtggattttg	1800
tttggaaggt	tttttaaaaat	tttttatatg	attgtggaat	aagttatgtg	gggtgtgggg	1860
ataagtgaat	tttttaaaat	ttattatgta	tgttttttatt	taattttggat	tttttagagt	1920
gttttttaggg	tattttgttt	aggatttagt	tagttgttgg	ttatatttat	gttttttagt	1980
tttttgagat	tttattttgt	tttgagaggg	ttaaaaagta	gtgtggttaa	atatttttagg	2040
ttttaaagta	tttttattgt	ggttggggaa	gtaaatagaat	tatattttat	aaaataatga	2100
aaatagtggt	agaaaaatat	tgagagatag	aaatatatttt	atgagttagg	ttatagttag	2160
agtgaaggta	gggaagggtt	ttaaagttgg	gtggagggga	taagttaaaa	agatgtggaa	2220
attgggtttt	tttttttatg	gttaaaagt	ttaaagggga	aaaaggaggt	ttaaaaatgt	2280
ttttggaaat	attatttttt	atgaattttt	tggtttttgt	tgtttttaag	ttatttgttt	2340
gagatgtaaa	tagaggagtt	ttgagaaaga	agttgaattt	gtattttttt	ttgtttttat	2400
ttgttttaaa	tttgtggtat	ttttaaatagg	atgaagtgg	agagaaagg	aaagagataa	2460
aagtgtagaa	agatggaaga	tttttagttgt	aaatggttat	ttgtagttag	atggaatagt	2520
tgttgatgtt	tagggaaatg	tatgtttttt	tttagatggg	aaggagtagt	ggaaaggggt	2580
gatgagtttt	tgtttgttta	tttaattatt	tatttttttt	tggttggttt	ttatttgtaa	2640
agtgggagtg	atatttgtgt	ttgttttttt	tattttataaa	gattatttgt	agagttataa	2700
tatggtgaga	tatagaattt	tgtttttaaa	aatataaagt	agaatttaaga	tgtaataaat	2760
aaggatagta	atttgtttag	ttatttgtta	ttattttatta	tagtttagtt	tttaggattt	2820
tggattgttt	ttttggtttt	attatagttt	tggattagtt	tattttttaa	ttttttgttt	2880
aagggtggag	ttttgttagt	tatgggtagg	gaattatttt	ttttgttttt	tttatttttt	2940
gttttttaaa	tatgttttag	gtttttgtat	ttgttttttt	ttttgttttg	tatttttttt	3000
ttgtgggttt	tttttagagtt	gattttttgt	ttgttttttt	tttttagtgag	gatggatttt	3060
tagggaggtt	tttttttatt	attgtagaga	gagtagggtt	tttttagtta	tgtttaattt	3120

agaattttgt	tttggttttt	ttatagtttt	agtattatag	aaaattatatt	tgtgtatttta	3180
tggatgttta	tgggggtaag	ggttttgtgt	tgtttaattt	agtattttga	attgtgtttg	3240
ttgaatgaat	atagaatttt	gtttgttttg	ggagagtata	gaaaatagtt	ttttattata	3300
tattatagtt	agttgtaaat	agtagatggg	tttttatatt	ttagagagta	agaattagag	3360
agagagagaa	agagagagag	tttgggtttt	ttttttttgt	gtttgttttt	tttagagaaa	3420
ttggaggggt	agtagttagt	atttttttgt	tggttttatt	aagtatagtt	aagggttttta	3480
ggatatgggt	atttttttatt	tgtggaagt	gttttgtttg	ggtgggtggg	tgttagttgg	3540
ttttgggttg	ggttagagat	atttagtggg	ttaggtgggt	gtgggggttag	ggtgtagatg	3600
agaaggggta	tgaggggtttt	gttttgagga	tttagtggtt	agtattgggt	ttgggtgtgt	3660
tttagtttat	ttatttgtgt	gtttatgggt	gtattatttt	ttataaggat	ttgaatgatt	3720
tgggggtggt	tttggtttgt	tattttttgt	ttttggtttt	gttttttttt	tggaggggtg	3780
atgaggtaat	gtggttttgt	tattgggttg	aggggggtggg	ttttaatagt	ttgaggtggg	3840
gtttttgggg	gtttagtgtt	atattatttt	gttggttagg	tagtggtgta	gagtgggtag	3900
taggtaggtg	gtgggtgttt	agatgggttt	tttttttttt	tttggttttt	tagtttttgt	3960
ttttttgttg	ggaggttgtt	tgttgagttt	tgtgttagtg	ttgaggtagt	tttgttgtgt	4020
tttattttgt	tttgttgggt	atttggaggg	tagtgtgttg	gagggttaagg	ttgttttgta	4080
tggtttggtg	ggtgagtgag	tttgggttgt	agtatttttg	ttggtgggtg	gtatggtaat	4140
tttggagagg	tgagtagtag	ttttggtagt	ggtggtagta	gtggtaatga	ttttttgggt	4200
tgggtttatt	gtgttttttg	gtagttggag	tttgggggat	tggggtgttg	aggtgtgtat	4260
atgtttgttt	agttattttt	aggatgtttt	ttgtaatttt	gatattggta	agtgtttttg	4320
gtgttttgtt	tgagttttat	gttgtagtta	ggattgtagt	gttggttagg	gaggtagggg	4380
gagttttatt	tttttttttt	gttttaggag	aggggttagat	gggggtgggg	tggagtgagg	4440
aaatttgatg	tttttgggtg	ggggtgttgg	tatagttgag	aggggaagat	gttttgtaga	4500
g						4501

<210> 53

<211> 4501

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 53

ttttgtaggg	tatttttttt	ttttagttat	gttagtgttt	ttgtttaagg	atattgagtt	60
tttttatttt	gttttaattt	tgtttgtttt	ttttttgggg	tagaggaaag	gagtgggggt	120
tgttttggtt	ttttaagtag	tgttgtagtt	ttgggtgtag	tgtgggggtt	gggtggggta	180
ttaggagtgt	ttattgatgt	tggagtgtga	gaagggtgtt	tgggggtggg	tgggtgagta	240
tgtgtatgtt	ttgggtgttt	agtttttttag	gttttagttg	tttaggagta	tgatgagttt	300
gagttaaggg	gttattgttg	ttgttgttgt	tgttgttggg	gttgttgttt	gtttttttta	360
agtgttgttg	tgtgttgttg	gtgggggtgt	tgtagtttga	gtttgtttgt	ttgttgggtt	420
ggtgtgggta	attttgggtt	ttgggtgtgt	gttttttgag	tgttttgggt	gatgggatgg	480
gggtgtagta	gggtgttttg	gtgttgggtt	aggatttggg	gggtgggttt	ttgggtgaagg	540
agtaggagtt	ggaggagtaa	gaggaggagg	agaagtttgt	tgagtgtttg	ttgtttgttt	600
gttgttttgt	ttgtgttgtt	gtttgggtgg	ttgagtga	tagtgttggg	tttttgggga	660
ttttgttttg	gggtgttggg	gtttgttttt	ttagattaat	ggtagagttg	tattatttta	720
ttgggttttt	aaaaaggggg	tggggttggg	ggtaaggggt	aatgggggtg	ggttgttttt	780
ggattgttta	gattttttata	gggaataatg	ttgttgtggg	tatgtgagtg	ggtgggttgg	840
ggtgtgtttg	ggattgggtg	ttgttgttgg	gtttttggag	tggagttttt	gtgttttttt	900
ttgtttgtgt	tttggtttta	tgtttatttg	ggttatttgg	tgtttttgat	ttaaattaga	960
attaataaat	atttatttat	tttagtagga	ttgttttat	aggtgagggg	tgggtatgtt	1020
ttagagattt	tgatttgtgt	tgggtggaatt	agtgggggaa	tgttaattgt	tattttttta	1080
gttttttttg	agagagtagg	tatagaggag	aaagatttaa	attttttttt	tttttttttt	1140
tttttgggtt	ttattttttg	ggatatggga	agttatttgt	tgtttgtagt	tgggttatgat	1200
atatgataga	agattgtttt	ttgtgttttt	ttagagtaaa	tgggggtttt	tattttattta	1260
ataaatatgg	tttaggatgt	tgggttaagt	aatataaagt	ttttgttttt	gtggatatatt	1320
atgaatgtat	aggggtgattt	tttgtgatgt	taggggttatg	aagaaaataa	aatagagttt	1380
tgggttggat	atgattgggg	agggtttgtt	tttttttgtga	tagtaaggga	aggggttttt	1440
gaagtgttat	ttttgttgag	aagtggataa	agataaggat	tagttttggg	gtaagttata	1500
ggagagaggt	attaggtagg	gggaatagta	agtgtaagga	ttttgggtat	gtttgaaaga	1560
tgaagaagtg	aaaggttaaga	ggaagtgggt	ttttgtttat	ggttgataga	gtttttatttt	1620
ttagtaaggg	atttgggggt	gagttgattt	aaaattgtag	taaaattagg	agaatgattt	1680

```

aggatttttag atgatttagtt ataatatagatg attgtagata attaatataa ttattattttt 1740
tattatttgat attttgattt tgttttgtat ttttaaaagt aggattttgt attttattgt 1800
attatagttt ttataataat ttttgtgggt aggaaaagta agtataagta ttatttttat 1860
tttttagatg aggaattgggt atagaaagat gggatgattg gtgggttagtt aggaatttgt 1920
tattttttttt tattgtttttt ttttatttga agagagatat gtattttttt gaatgttagt 1980
agttgttttta tttaattgta aatggttatt tgtagtgtggg attttttatt tttttatatt 2040
tttgtttttt tttttttttt ttttgtttta ttttgttaga aatgtttataa gtttggata 2100
aatagaaata gggagaaatg taagttagt ttttttttta gaattttttt gtttatattt 2160
tagataagt atattgggat agtagagggt gaagaatttg tgagagatgg tatttttaag 2220
aatatttttg aaattttttt tttttttttg agtatttttag ttataggaaa gggaaattag 2280
tttttatatt tttttgattt gtttttttta tttagtttta aaaatttttt ttgtttttat 2340
tttaattgtg gtttaatttg tagagatgtt tttgtttttt gatgtttttt tagtattgtt 2400
tttattgttt tatgggtat gattttattg tttttttaat tatagtagga atattttgag 2460
gtttgggata ttttagttata ttgtttttta gtttttttag aattaaatag ggttttagga 2520
gattggagag tatgggtgtg gtttaatagt gattgagttt tgagtagagt gttttggagg 2580
ttattttaag gatttaggtt gaatgagggt atatgtgttg gaatttgaga gatttgttta 2640
tttttgtgtt ttatatgatt tattttatag ttatgtggaa ggttttagaa gatttttttag 2700
attaaattta ttttggataa gtattttata tgatagagggt tttttttttt tttttttttt 2760
atatttttagt tttgttttaa gtgttgatat tttttttaat ggaaggtttt gtttggata 2820
taagtattaa gtagataatt tttgttgaat ttttaagtag agttttttta tagaaagtat 2880
ttgaagtgtt ttttttttagt agttatttaa ttatgaaagt ataagtataa tttgattttt 2940
tttttagttg aaaagtaatg aaattatttt ttggtttaatt tttttttatt ttttatttta 3000
agttggttta tatagtgttt tgaagttagt tgaattttaa gagtttttta gttgggaggt 3060
ttttttttat tttaaatttg agttagtttt tttttgttta ttgtgtgaag gtagtttggg 3120
ttttatttta aggaaaagaa atagtaaat ttatgaattt ttgtgtaggg gagttttttt 3180
gttagggtta ttttttttag taggtattta ttagtgttga tgttatgggt tttatgagtt 3240
taataatatg taagaatttg ttatttaata ttatttaata agttagggtg ggtgaatttg 3300
aggttaatag taagaatgaa gatgtagggt ggggtgtgtg gtttatgttt gtaatttttag 3360
tattttgaga ggttaagggt ggtggattat gaggttagga gattgagatt attttggtta 3420
atatggtgaa attttgttg tattaataat ataaaaaatt agttagggtg ggtgggaggt 3480
gtttgtagtt ttagttattt gggagggtga ggtaggagaa tgggtgtgaat ttgggaggtg 3540
gagttttagt tgagttgaga ttatgttatt gtatttttagt ttagggtgat gagtgagatt 3600
ttgtttttta aaaaaaaaaa aaaaaaaaaa agaatgaaga tgtagggttt tttgtttttt 3660
tttgatagtt aagaataatg atagagttat atatttgga agaattgagt aagttttaag 3720
atttatttgg tttgtttata tatttatttag gatgatttg tatttttttt tttggaattt 3780
ttttaggaaa ggtgagttta tatttatttt ttttgtatta agttatagga tgttagagtt 3840
tgtaggaaga gaagtgttaa aaaggatttt agaaattatt tatttttgtt ttaaattgtg 3900
gaaaaataag gtttagagaa gtgaaggaaat ttgtttattt ttagggttta gttttttaag 3960
ttgtaagggt tgggtttatgt ttgtattgtg ggtttggaaa ttttagttat ttatagattt 4020
tgtatttgtt ttttagattt gtagatagat ttgtttgagt ttttgtatag tgttttagtt 4080
atagagaaat tttatttata ttgattaaat aattttttat tatgataata attatttttt 4140
gagttaatta gaagtaatat aggtttgttt ttttgatagg ttattttttt gtgtgtttat 4200
tttttttttt ttttaatta ttagttaatg tatttttaat atattattat aaaaaaagt 4260
atatgaaaat tttgtttttg ggaaatgaaa agagagtaaa gtggaaataa aaaattaaaa 4320
gatttgagat ttgtttttta tgtttagtaa tagttgtgta tttgttttgg ttaagttatt 4380
ttgtttgttt aggtgtttat ttttgtgttt attggatgaa agatagaatt tagtggtatt 4440
taggattttt tttgttttaa aaattttaag attttatggg gaattttgta ggataagtga 4500
a 4501

```

<210> 54

<211> 7928

<212> DNA

<213> Artificial Sequence

<220>

<223> chemically treated genomic DNA (Homo sapiens)

<400> 54

```

aatgttaagg atatttgggg atagagtttt atttatttta tatgagatag ggatatttag 60
ggatagtgtt ttattttatt tgtatttgag agggatattt ggggggttga attttattat 120
tttatatgtg atagggatat ttggggatgg tgttttattt attttatatg tgatagggat 180
atttggggat ggtgttttat ttattttata tttgagaggg atatttaggg atggtgtttt 240

```

atttatttta	tatgtgatag	agatatatttg	ggatagtggt	ttatttattt	tatatgtgat	300
agggatattt	ggggatgggg	ttttatttat	tttgatgtg	atagggatat	ttggggatgg	360
tgttttattt	attttatatg	tgatagggat	atttggggat	ggtgttttat	ttattttata	420
tgtgataggg	atatttgggg	atggtgtttt	atttatttta	tatgtgatag	ggatattttg	480
ggatggtgtt	ttatttattt	tatatgtgat	agggatattt	ggggatggtg	ttttatttat	540
tttgatgtg	atagggatat	gtggggatgg	tgttttattt	attttgtatg	tgatagggat	600
atttgggggt	tttgtgttaa	ttatttttga	tgtgataggg	atatttgggg	atggtgtttt	660
atttattttg	tatgtgatag	ggatattttg	ggatagtggt	ttatttattt	tatatgtgat	720
agggatattt	ggggattgtg	ttttatttat	tttgaatgtg	atagggatat	ttggggatag	780
tgttttattt	attttgtaag	tgatagggat	atttgggggt	tgtgttttat	ttatttttga	840
tgtgataggg	atatttgggg	gttgtgtttt	atttattttg	tatgtgatag	ggatattttg	900
gggttgtgtt	ttatttattt	tgtatgtgat	agggatattt	gggggttgtg	ttttatttat	960
tttgatgtg	atagggatat	ttgggggttg	tgttttattt	attttatatg	tgatagggat	1020
atttgggggt	tgtgttttat	ttatttttga	tgtgataggg	atatttgggg	gttgtgtttt	1080
atttatttta	tatgtgatag	ggatattttg	ggatagtggt	ttatttattt	tatatgtgat	1140
agtgatattt	ggggattgtg	ttttatttat	tttatatgtg	atagggatat	ttgggggttg	1200
tgttttattt	attttgaatg	tgatagggat	atttggggat	ggtgttttat	ttattttata	1260
tgtgataggg	atatttgggg	atggtatttt	atttatttta	tatgtgatag	ggatattttg	1320
ggatggtgtt	ttatttattt	tgtatgtgat	agggatattt	ggggatggtg	ttttatttat	1380
tttgatgtg	atagggatat	ttgggggttt	tgtgttaatt	attttgtatg	tgatagggat	1440
atttggggat	agtgttttat	ttatttttga	tgtgataggg	atatttgggg	atggtgtttt	1500
atttatttta	tatgtgatag	ggatattttg	ggattgtgtt	ttatttattt	tgaatgtgat	1560
agggatattt	ggggatagtg	ttttatttat	tttatatggg	atagggatat	ttggggattg	1620
tgttttattt	attttgtatg	tgatagggat	atttggggat	tgtgttttat	ttatttttga	1680
tgtgataggg	atatttgggg	attgtgtttt	atttattttg	tatgtgatag	ggatattttg	1740
ggattgtgtt	ttatttattt	tgtatgtgat	agggatattt	gggggttgtg	ttttatttat	1800
tttgatgtg	atagggatat	ttgggggttg	tgttttattt	attttgtatg	tgatagggat	1860
atttgggggt	tgtgttttat	ttatttttga	tgtgataggg	atatttgggg	atggtgtttt	1920
atttattttg	tatgggatag	ggatattttg	ggattgtgtt	ttatttattt	tgtatgggat	1980
agggatattt	ggggatagtg	ttttatttat	tttatatgtg	atagggatat	ttggggattg	2040
tgttttattt	attttgtatg	tgatagggat	atttggggat	agtgttttat	ttattttata	2100
tttgggaggg	atatttaggg	atggtgtttt	atttatttta	tatgtgatag	ggatattttg	2160
ggttgtgttt	tattttattt	atatttgaga	gggatatttt	gggatagtg	tttattttat	2220
ttatattttg	gagggatatt	tagggatggt	gttttattta	ttttatatgt	gatagggata	2280
tttggggatt	gtgtttttat	tattttgtat	gtgatagga	tatttgggga	tagtgtttta	2340
tttatatttg	atgggatagg	gatatttggg	gattatgttt	tatttatttt	atatgtgata	2400
gggatatttt	gggatgggtg	tttattttat	ttatatattg	gagggatatt	tggggatagt	2460
gttttattta	ttttatatgt	gatagggata	tttggggatt	gtgtttttat	tattttgtat	2520
gtgatagggg	tatttgggga	tagtgtttta	tttattttgt	atgggatagg	gatattttgg	2580
ggttatattt	taattatgtt	gtatgggata	gggatatttt	gggggttgtg	tttattttat	2640
ttatatgtga	tagggatatt	tgggggta	gttttattta	ttttgtatgt	gatagggata	2700
tttggggatt	atgtttttat	ttttgtataa	gttaggggta	gattgtgatt	ttatttgaag	2760
ttagagaata	gtaatgatag	gtagagtttt	gattagagaa	tttaaatattt	ttttaatgaa	2820
ggaagtggga	gtataaaaa	taaaattggg	ttgtatgatg	tttatttgat	ttggtgtggt	2880
ttatttgagt	gtagtaggt	gtgaggtatt	tgtgttttga	tgggtagggg	tttttagtta	2940
tgtaaagtgt	agtattttta	gtaatttgtt	gtaaatattg	ttgagttagt	aattttgtat	3000
tgtatataga	aaatggtgtt	aggagtgtta	attttatgtt	atatgatttt	tgttattata	3060
aaaagaaaaa	aagaaaaaaa	agagttttaa	gaaggttatt	ttttttgttt	gtatgggttg	3120
aagtttttata	tgttttggga	gtttgtgggg	agggggtgaa	attgggattt	tttttagttg	3180
ttatggtagg	gtttgggagt	attgggagtt	aaaagggggt	tggagtggag	gtttttta	3240
attaaattta	gaaaaatagg	gtggggatat	ggtaggggtt	agtagtatta	ttttttgaat	3300
atttataaat	attgtttttt	tttttagtag	tggagtattt	tgttgttttt	tgtttttatg	3360
tgggtttttt	tatatttaaa	gatgggatta	ggatttgtgt	tggagaatag	ttttattttt	3420
ttttttttat	tttgttttgg	tataattaat	gaatattttt	tttttttaaa	gatagagttt	3480
tattttttgt	gttttaggtg	gagtataatg	gtataatttt	agttttattgt	agtttttgtt	3540
ttttgggttt	aagtgttttt	tttgtttttg	tttttttaagt	agttgggatt	ataggtatat	3600
attattatgt	ttagttaatt	tttgtatttt	tagtatagat	agggttttat	tatgttggtt	3660
aggttgggtt	taaatttttt	atttttaggtg	atttattttg	tttagttttt	taaagtgttg	3720
ggattattgg	tgtgagttat	tgtattttgt	tgttaataata	taattaaatt	ttaaatataa	3780
atttgtatat	tggttgatta	tgtgtatttt	taaaattttt	attttttatt	tttaggaaga	3840
gggggttttt	gtttttattt	tttattttta	tttttgaagt	tgtgaagagg	atttataggta	3900
attttaggtt	atttttgtta	gagtgtttgt	gttttttagat	attttttttt	atttgttggt	3960
atttgggttt	attgtttgtg	ttagtttttt	ttgtttattg	ttttgggttt	ggtgttttga	4020

aattgtgtgt	ttattaaaaat	gtgaagggtga	atatttgttaag	tttatgtaaa	ttggatagga	4080
gggagagtag	aggtagagat	tattgtgttt	atattgatgtt	ttgagtga	agttatgtgt	4140
gtttatgtga	tgatggagat	aggaggatta	gggttttgtt	tggttttttt	tttgagtttt	4200
tattgtattt	agttttgggg	tttgggtttt	tgatggttat	tattttttta	tttgggtttt	4260
tgtgtagtta	agtgtagttt	tgtatgttta	ttttttatgt	tagtttttgt	agtgaagatt	4320
tggtagttt	ttttaggag	atgaattttt	tggtgttttt	gaggaagtgg	tgtttgttgt	4380
gtttggagtt	ttagagggtt	gggggtatta	gttgggtgtg	gtaggtttgt	atgaagtgtt	4440
atatttgtta	ggggttgttg	tgttgggtga	gtagttgtat	taggtgatgg	gggttttgtt	4500
tttttttttt	gggggttgtt	atagagtttt	gggggttttt	ttgggtatag	atattgggtt	4560
ttgggggtgat	tgtagtttgt	agtgggtagt	gtgttttgag	gagtattttt	taggggtatt	4620
gtgtgtggtt	tttaagtagt	tttagaaata	gggggttgtt	ttgttagtag	tgttggggta	4680
ggtggggtaa	tttgtgggga	gttttttgta	tttaggggtt	ggaatttaga	aagatgggtt	4740
ttatgagttt	ttgagtgtta	gttaggttgg	gttttagaga	gttgagtagg	aaggagggtt	4800
gtagtgtttt	tttgttgttt	gaggagtaga	ggaagtgttt	ggttttgggt	tatatgggg	4860
gataaggtgt	gttttaggga	tgtggtggtt	gtgatgtgga	tgggggggtt	gtgtggtgtt	4920
ggtggtttat	ggatgggtgg	gagtgggtgt	tgttagagag	tgtatttttt	aaagaggtgg	4980
tttttttggg	gggtttggta	ggtgatatta	tatagaaatt	atggttattt	ggtttatgtg	5040
ttttgtttgg	gtgggttttag	gatttttgtt	taatgggtgt	ttgttttgtt	ttaggggtag	5100
tgttatgttt	gggttttttg	ggtaatggta	gattttgggt	ggtattgttt	ttgtgttttt	5160
ttgtatttgg	ggttggtagg	tttaggggga	ttttgggttt	tttgatgtta	tggttttagg	5220
tttgttttga	ttttagatgt	ttttgggggt	tattagtgtg	tggtgggggt	tgggttttag	5280
tggtagtgtt	gagttgggtat	agtgggtgtt	tgtatatttg	gtaggtgtag	ttgggagtta	5340
ttagtataaa	gagtgtgtag	tgtgttagta	ggtgaattag	tatgttgttg	tttatgtggt	5400
gtagtagtag	tttttatgtt	ttgttttttt	gtagtgtgtt	ggttatttgt	ttgggtaggt	5460
agttgtgtat	gttgggtggg	aaggttttgg	gggggttttt	gtgggttttg	tttagtagtg	5520
tgaagtga	ggttagtatg	ttttttgtgt	tgtgtttgta	tagtttttgt	agtatttggg	5580
ttattagttt	ttttaggtag	gataatttgt	ggggaagtgt	tttgagttgt	ttgtgttgtt	5640
ttttgtatgt	tgttggtttt	ttttggttgt	ttttaatttt	agttggatgt	tgattttggg	5700
gaggtttatt	tgggtggaagg	aggggtgtgt	gggggtgtgt	tgtgtgtttt	agggatgtta	5760
tattaggtat	tgggttatta	gtgtgtgga	agttgtttgg	ttttgttgtt	gtattagtgt	5820
ttagttttgg	ggtttttaggt	gttgtatgaa	tgtggttagt	ggtagtattt	tgtggtagt	5880
gttgtgtagt	agggagtgt	tgggtttgga	gtggggagt	tgtggtattg	tgggggtgtt	5940
tgggttagg	gttttttatg	tgtgtagtag	gatgtagtgt	tgtttgaaat	ttgtgttgtg	6000
aggagagggt	ggggttgtgg	aaagggaagg	gaggggttgg	gaggggttgg	aggggggtgg	6060
gttggggatt	tgggaggggt	tgggatgggg	tgggggttgt	gtggaggagg	tggagtggga	6120
aggtgaagg	gtaggatggg	tgtttgggtt	tttagttttt	ttgttatgtg	ggaagtgtgg	6180
ttttgggtgt	ttgtgtttgt	gaatttatgt	ggagtttggg	ttggttttga	tagtgtagtt	6240
gttttgggtg	gatttggggg	tttgggttgt	gttttttggg	ttgtgtgttg	tttgtgtttt	6300
taggtgttag	ggatgttagt	gagggtttta	gtggagagag	gttgaattgg	tttaggttgt	6360
ggggttaattt	gagggagggg	ttatgatgtg	gaggttttgg	gaataggtgt	gtgtggtgat	6420
tttttgggtg	ttgggttgat	ttggagattt	agggttgttt	ttaggtttgg	atgtgggggtg	6480
ttgggttttg	ggtattatga	atgttggatg	tgaaggggag	gatggagggtg	tgtagatgtg	6540
gttggggatg	aatttgagga	tgtattgttt	tttggatggg	tatgtgggat	tttttggagt	6600
gtttttttgt	aataattttt	tgtgatttgg	gttttttgat	ataggtttgt	tatttttttt	6660
tgtaggtttt	taggtggtga	gggtttttta	ttatgagtaa	attattttta	atttgtta	6720
tatttatttg	ggtggttttg	ttgagaaagg	gtgggaaatg	gagttagggtg	tttttgttgg	6780
tttgtatttg	ggtgttttat	attagtata	atggttttga	ttttgggttt	tggtattttg	6840
tttggtagat	gaggttaata	tttgggtata	ttttgtttgt	atagggtgga	gggtaatttt	6900
ggggttagg	tatttgggtt	taagttttgg	attgtagagt	taggaggttt	gatttttagt	6960
tttagtagtag	aagttatatg	gttattgggt	tttttttagat	ttgggggttt	ggtataaattg	7020
taggatagtt	gaggattttt	taggaattta	gatttttggg	tgtttaagtt	tggatttaag	7080
gggtgagaaa	tttttgggtt	ttttgaggtt	ttgtagggat	gttgtagttg	aggttggtaa	7140
atattgaaat	gttaataaat	gtaattttta	atgtaatttt	ttttattttt	agaaatttgt	7200
ggaggaaatt	gttttatttt	tggagttagt	atttgaaatg	gttttgtatt	tttttgggtt	7260
tgttatgttt	gttggaggtt	agttttgttt	tgtaaatatt	taggattata	ggttgttttt	7320
ttagaaaattt	ttttagtgat	ttttaagttt	ttttaagggt	ttgtgtttgt	gaattgtttt	7380
tgtttattagg	gtaaaggggt	ggtttggaaa	atttgtttta	ataaaaagtt	agttgtagtt	7440
tatatgggtt	ttttgtagag	aagttaatat	agaaaatata	attttaaaag	aggggaagaga	7500
agaaatggaa	gtagaagatt	atgttggagt	aattaatatt	atgtgtatgg	tgaggaaatg	7560
ttttttggta	tttaatgaag	attgttgata	tttagaagat	attttagtat	tatgggtgta	7620
gttagtgtgt	ttttgaaaag	ttgatgatgt	tttagttatt	atagtgtaaa	atattaagag	7680
tgttttaata	ataataaaaa	aattttatta	ttggttttaa	atattataat	atttgagttg	7740
ggtgagtttt	ttatttttaga	tttagatgtt	tttaaataga	gtaaaattttg	agttgggtat	7800

ggtaggtttat	atttgaatt	ttagtatttt	aggaggtaga	ggtaggtgga	ttatttgagg	7860
ttagaagttt	gagattagtt	tggttaatat	ggtagaatttt	atttttattt	ttgtttttat	7920
taaaaaata						7928

<210> 55  
 <211> 7928  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 55

tatttttagt	agagatgggg	gtgggggtgg	ggtttattat	gttggttagg	ttggttttga	60
atttttgatt	ttagatgatt	tatttgtttt	tgttttttaa	agtgttgga	ttataggtgt	120
gagttattat	gttttagtta	gaatttattt	tgtttagaaa	tatttgggtt	tgaggttagga	180
agtttatttt	atttaagtgt	tgtgggtgtt	taagttaatg	atagaatttt	tttattgttg	240
ttagaatatt	tttgatgttt	tatatgtga	tgattaagat	attattagtt	ttttaaagat	300
atattaattg	tatttataat	attgggggtg	tttttgggta	ttagtgattt	ttattgaatg	360
ttgggaggtg	tttttttggt	atgtatatgg	tgtttaattat	tttagtataa	ttttttgttt	420
ttattttttt	tttttttttt	tttaaaattg	tgttttttat	gttggttttt	ttgtagagaa	480
ttagtgtaag	ttataaattt	atttttggtg	gaataaattt	tttaaatgtt	ttttttgttt	540
tagtggtaga	gataatttat	aaatatagtt	ttttaaaaag	gtttagggat	tattaagggg	600
atttttagaa	gagtgatttg	taattttaag	tattttataag	atgaggttaa	tttttagtga	660
gtgtgatagt	ttagggaggg	tgtgaggttt	gtttaaatgt	tagttttata	aataaagtaa	720
ttttttttgg	tagtttttga	aagtaggaaa	gggttatatt	aaggttgtgt	ttgttagtat	780
tttagtggtt	gttgatttta	gttatagtat	ttttgtaagg	ttttgggaga	tttagaagtt	840
ttttgttttt	tagatttaaa	tttgagtaat	ttggagtttg	gatttttggg	aagtttttag	900
ttgttttggt	gttgtgttgg	ggtttttagt	ttggagggga	ttagtggttg	tgtgggtttt	960
attgttgggt	tggaaagtgg	gttttttagt	tttgtagttt	gaggtttggg	gttaggtgtt	1020
tggattttga	ggttgttttt	tattttgtgt	gggtgggatg	tgattagatg	ttggttttat	1080
ttgttagata	gagtgttggg	gttttagggt	aaggttgttg	tggttggtgt	gaggtgtttg	1140
gtgtgtgggt	agtaggagtg	tttggtttta	ttttttatgt	ttttttgatg	ggattgtttt	1200
gggtgggtgat	taatatagtt	gggttggttt	gtttatggtg	gggatttttt	gttgtttgag	1260
aaatttgtaaa	gagaaatgat	gggtttgtgt	taaggagttt	aagttgtggg	gaagtgttgt	1320
agggaggtat	tttgggaggt	tttgtgtgtt	tgtttaggga	gtaatgtgtt	tttgggtttg	1380
tttttagttg	tgtttatgtg	ttttgttttt	tttttttatg	tttggtattt	gtggtgtttg	1440
gagtttgatg	ttttgtgttt	ggatttgagg	gtagttttgg	gtttttggat	taggttagtg	1500
gttaaagggt	tgttgtatgt	atttgttttt	agggttttta	tattatgggt	ttttttttgg	1560
gttattttat	agtttaggtt	gatttgattt	ttttttgttg	gggtttttgt	tggtgttttt	1620
gtattttggg	agtgtgagtg	gtgtgtgggt	ggggaagtgt	ggtttagatt	tttgggtttg	1680
tttgagtag	ttgtgttgtt	gggttaggtt	tggtttttta	gtggatttgt	gggtatagat	1740
gttttaggatt	tggtttttta	tgtggtggag	ggattgggga	tttgggtatt	tggtttgttt	1800
ttttattttt	tagttttgtt	ttttttgtgt	ggattttgtt	ttgttttgat	tttttttggg	1860
tttttgggtt	agtttttttt	gggttttttt	agtttttttt	tttttttttt	gtgggtttgt	1920
tttttttttg	tggtgtgagt	tttaggtagt	gttgtgtttt	gttgtgtatg	tgggaagtgt	1980
tggttttggg	tattttttgtg	atgttgtgtg	ttttttgttg	ttgagttgtg	tggtttttgt	2040
tgtgtagtta	ttattgtgag	gtgttgttgt	tggttatgtt	tgtgtggtgt	ttgggggttt	2100
agggttgggt	gttgggtgag	tgtggggatt	tgggtggttt	ttgtgtgttg	gtgggttagt	2160
gtttgggtgtg	tgtgttttgg	gatgtatggg	tggtttttgt	tggttttttt	ttttgttagg	2220
tgggtttttt	tgggggtggg	gtttgggttg	gggttagggg	gggttggggg	aattagtgtt	2280
atgtggagag	tagtgtaggt	gatttagggg	gttttttttg	taggtgtttt	gtttgaagga	2340
gttgggtggt	tgagtgttgt	agaggttgtg	tgagtgtggg	gtgaagaatg	tggttggttt	2400
tggttttgtg	ttgttggatg	gggtttgtgg	gggttttttt	gaggttttta	ttattagtgt	2460
gtgtagttat	ttgtttaata	tgggtgattga	tgtattgtgg	gggagtgggg	tgtgggggtt	2520
gttgttgtgt	tgtgtgggtg	atgatgtgtt	ggtttatttg	ttgggtatgt	gtgtgttttt	2580
tgtgttgggt	gttttttagt	gtgtttatta	gggtgtgtgg	ttgttgttgt	attagtttgg	2640
tgttgttatt	taggtttggg	ttttgttata	tgttagtgga	ttttgaaggt	gtttgggatg	2700
tgaatgggtt	tgggaattata	gtgttaggga	gggttggggg	tttttgggtt	tgttagtttt	2760
gggtgtgagg	aggtgtgggg	gtagtgttag	ttgaagtttg	ttgttgttta	agaggttttag	2820
gtgtgggtgt	gttttttgagt	tggagtggat	gtttgttggg	taggggtttt	gggtttattt	2880
gggtaggatg	tgtggattga	gtgattgtgg	tttttgtgtg	gtgttatttg	ttagatttgt	2940



tgaagaagtt	atTTTTtTg	agggtgtgtt	TTTTggtatg	tgTtattttt	atttatttTgt	3000
gggtTgttag	tattatgtgg	gtTTTTtatt	tatattgtgg	ttattatgtt	tttgggatat	3060
gttttgtttt	ttggtgtatg	ttgagattaa	gtattttttt	tatttttttag	gtgataagga	3120
gtagttgtgg	TTTTTTTTtt	tatttagttt	tttgaggttt	agtttgattg	gtgtttggag	3180
gtttgtggag	attatttttt	tgggttttag	gttttggatg	ttagggattt	tttgtagggt	3240
gttttgtttg	tttttagtgt	attggtaaat	gtggtttttg	TTTTtgaggt	tgTttgggaa	3300
ttatgtgtag	tgTttttatg	gggtgttttt	taagatgtat	tgTttgttgt	gagttgtggg	3360
tatttttagta	gttggtgttt	gtgtttggga	gaagtttttag	ggTttgtgg	tggttttttga	3420
ggaggaggat	atagattttt	gttgtttggg	gtagttgttt	tgTtagtata	gtagttttttg	3480
gtaggtgtat	ggTttgtgt	gggtttgttt	gtgttggttg	gtgttttttag	gtttttgggg	3540
ttttagggtat	aatgaatgtt	gttttttttag	gaatattaag	aagtttattt	ttttggggaa	3600
gtatgttaag	tttttgttgt	aggagttgat	gtggaagatg	agtgtgtggg	attgtgtttg	3660
gttgtgtagg	agtttaggtg	aggaggtggg	ggTtgttgag	ggTtaggtt	ttagagtga	3720
atgtagtagg	ggTttagaaa	agggggtagg	tagagttttg	gtttttttgt	ttttattgtt	3780
atgtgggtat	atgtggtttt	ttgttttagga	tgTtgagtgg	atatgggtgat	ttttgttttt	3840
gttttttttt	ttgttttagtt	tgtataaaatt	tatgaggttt	atTTTTatgt	tttgatggat	3900
atgtgggttt	taggtgttga	ggTtagagta	gtgaatagag	gaggttgggt	gtggtagtgg	3960
agTtgggttg	ttggtaaatgg	ggagaagtgt	ttggaagtat	agatgttttg	gtgaggggtg	4020
ttgtagggtta	tttataaattt	tttttgtaat	tttaaggggtg	ggaatgagag	gtggggatga	4080
gaattttttt	tttttggggg	tgggaggttaa	gggtttttgta	gggtgatgtg	gttagttaat	4140
atgtagggtt	gtgttttaaga	tttaatttgtg	gtgtgatggg	taggtgtggg	ggTttatgtt	4200
ggtaattttt	gtattttggg	aagttgaggt	aggtggatta	tttgagggtta	ggagtttgag	4260
attagtttga	ttaatatggg	gaaatttttat	ttgtattaaa	aataaaaaaa	ttagttgggt	4320
atgggtgggt	gtgtttgttaa	tttttagttat	ttgggaggtt	gaggtaggag	aattatttga	4380
atTtaggagg	tggaggttgt	agtgaattga	gattgtgtta	ttgtatttta	gtttgggtga	4440
taagagtga	atTTTTgttt	taaaaaaaaa	aagtgtttgt	tgatttgtgt	aggatagggt	4500
agagggaggg	agataagatt	gttttttagt	atagattttg	gttttatttt	taggtatgaa	4560
gaggggtata	tgggagtga	ggatagtaga	tggTtttatt	tgTtgaggaa	gggatagtgt	4620
ttgtgggtgt	ttaggggatg	gtgttgttgg	gttttgttgt	gtttttattt	tgTttttttg	4680
gatttgatgt	tgaggaattt	ttgttttagt	ttttttttgg	tttttagtgt	ttttagggtt	4740
tattgtggta	gttagaagaa	gttttgattt	tatttttttt	ttataaaatt	ttagatatg	4800
taagattttt	ggTtatgtag	ataaggaggg	tgattttttt	ggggTttttt	tttttttttt	4860
ttttttttta	tgggtggtaaa	agTtatataa	tatgagattg	gtatttttaa	tattgttttt	4920
tgtgtatagt	gtagaattgt	taattttggg	gtgttttatag	taggttgttt	gaaatgttgt	4980
gttttgtgtg	attggaagt	tttattttatt	gaatggtagt	tgTtttata	ttgttgtgtt	5040
ttagggtgat	tatgttgagt	tagataagtg	ttatgtaatt	tagttttgtt	ttttgtgttt	5100
tagttttttt	tgTtgaggag	agTttgagtt	ttttgattag	gattttgttt	gttatgttgt	5160
ttttttgatt	ttagatgagg	ttataaattg	tttttgggtt	atgtaggag	tgaggtgtgg	5220
tttttgggtg	tttttgttat	gtgtagggtg	agtgaggtgt	tgTttttagg	tgTttttgtt	5280
atgtgtaggg	tgagtgaggt	gtggTttttg	gggtgtttttg	ttttgtgtag	tgTgattgag	5340
gtgtgggttt	tgggtgtttt	tgTtttgtgt	agggTgagtg	aggtattgtt	tttgggtgtt	5400
tttgttatgt	gtaggggtgag	tgaggtgtgg	tttttgggtg	ttttgttat	gtgtaggggtg	5460
agtgaggtat	tgTtttttggg	tgTttttttt	aggtgtaggg	tgagtgaggt	gttgtttttg	5520
gggtgttttt	ttatgtgtag	ggTgagtgag	gtgtggTttt	tgggtgtttt	tgTtttgtgt	5580
agggTgagtg	aggtgttgtt	tttgggtgtt	tttgttatgt	gtaggggtgag	tgaggtgtgg	5640
tttttgggtg	tttttgttat	gtgtaggggtg	agtgaggtat	tgTttttggg	tgTttttttt	5700
aggtgtaggg	tgagtgaggt	gttgtttttg	gggtgttttt	ttaggtgtag	ggTgagtgag	5760
gtgtgggttt	aggtgttttt	gttatgtgtg	gggtgagtg	ggTattgttt	ttgggtgttt	5820
tttttaggta	taggggtgag	gaggtattgt	ttttgggtgt	ttttgttatg	tgtaggggtg	5880
gtgaggtgtg	gttttttaggt	gtttttgtta	tgTtaggggt	gagtgaggta	ttgttttttg	5940
gtgtttttgt	tttgtgtagg	gtgagtgagg	tgTggTtttt	aggtgttttt	gttttgtgtg	6000
gggtgagtg	ggTgttgttt	ttgggtgttt	ttgttatgtg	taggggtgag	gaggtatggg	6060
ttttgggtgt	ttttgttatg	tgtaggggtg	gtgaggtgtg	gtttttgggt	gtttttgtta	6120
tgTtaggggt	gagtgaggtg	tggtttttgg	gtgtttttgt	tatgtgtagg	gtgagtgagg	6180
tgTggTtttt	gggtgttttt	gttatgtgtg	gggtgagtg	ggTgtggTtt	ttgggtgttt	6240
ttgttatgtg	taggggtgag	gaggtgtggg	ttttgggtgt	ttttgttatg	tgtaggggtg	6300
gtgaggtatg	gtttttgggt	gtttttgttt	tgTtaggggt	gagtgaggta	ttgttttttg	6360
gtgtttttgt	tatgttttag	gtgagtgagg	tgTggTtttt	gggtgttttt	gttatgtgtg	6420
gggtgagtg	ggTattgttt	ttgggtgttt	ttgttatgtg	taggggtgag	gaggtgttgt	6480
ttttgggtgt	ttttgttatg	tgtaggggtg	ttgatgtgag	gtttttgggt	gtttttgtta	6540
tgtgtagggt	gagtgaggtg	ttgtttttgt	gtgtttttgt	tatgtgtagg	gtgagtgagg	6600
tgTgtttttt	gggtgttttt	gttatgtgtg	gggtgagtg	ggTgttgttt	ttgggtgttt	6660
ttgttatgtg	taggggtgag	gaggtgttgt	ttttgggtgt	ttttgttatg	tttaggggtg	6720

gtgaggtatg	gttttttgggt	gttttttgta	tgtgtagggg	gagtgaggtg	tggtttttgg	6780
gtgttattgt	tatgtgtagg	gtgagtgagg	tattgttttt	gggtgttttt	gttatgtgta	6840
gggtgagtga	ggtgtgggtt	ttgggtgttt	ttgttatgtg	taggggtgagt	gaggtgtggt	6900
ttttgggtgt	ttttgttatg	tgtaggggtga	gtgaggtgtg	gttttttgggt	gttttttgta	6960
tgtgtagggg	gagtgtgaggt	tggtttttgg	gtgtttttgt	tatgtgtagg	gtgagtgagg	7020
tgtgtgtttt	gggtgttttt	gttatgtgta	gggtgagtga	ggtatgggtt	ttgggtgttt	7080
ttgttatgtg	taggggtgagt	gaggtgtggt	ttttgggtgt	ttttgttatt	tgtaggggtga	7140
gtgaggtatt	gttttttgggt	gttttttgta	tgttttaggg	gagtgtgaggt	tggtttttgg	7200
gtgtttttgt	tatgtgtagg	gtgaatgagg	tattgttttt	gggtgttttt	gttatgtgta	7260
gggtgagtga	ggtgtgtgtt	ttgggtgttt	ttgttatgtg	taggggtgatt	gatgtgaggt	7320
ttttgggtgt	ttttgttatg	tgtaggggtga	gtgaggtgtt	gtttttgtgt	gttttttgta	7380
tgtgtagggg	gagtgtgaggt	ttgtttttgg	gtgtttttgt	tatgtgtagg	gtgagtgagg	7440
tgtgtgtttt	gggtgttttt	gttatgtgta	gggtgagtga	ggtgtgtgtt	ttgggtgttt	7500
ttgttatgtg	taggggtgagt	gaggtgttgt	ttttgggtgt	ttttgttatg	tgtaggggtga	7560
gtgaggtgtt	gttttttgggt	gttttttgta	tgtgtagggg	gagtgtgaggt	ttgtttttgg	7620
gtgtttttgt	tatgtgtagg	gtgagtgagg	tattgttttt	gggtgttttt	gttatgtgta	7680
gggtgagtga	ggtgtgtgtt	ttgggtgttt	tttttaggtg	taggggtgagt	gaggtgttat	7740
ttttgggtgt	ttttgttatg	tgtaggggtga	gtgaggtgtt	gtttttgggt	gttttttgta	7800
tgtgtagggg	gagtgtgaggt	tgggttttgg	gtgttttttt	taggtgttagg	gtgagtgagg	7860
tgtgtgtttt	gggtgttttt	gttttttgta	gggtgagtga	ggttttgttt	ttaggtgttt	7920
ttgggtgtt						7928

<210> 56  
 <211> 25  
 <212> DNA  
 <213> Homo Sapiens

<400> 56

tttgttactg tggtagatat actac

25

<210> 57  
 <211> 24  
 <212> DNA  
 <213> Homo Sapiens

<400> 57

gaaaaataaa ctgtaaatca tatt

24

<210> 58  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 58

aatttttaggt tagagggtta tcgcgt

26

<210> 59  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> chemically treated genomic DNA (Homo sapiens)

<400> 59

tccccaaaac gaaactaacg ac

22



<210> 60  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 60

cgcccacccg acctcgcat

19

<210> 61  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 61

aatttcgttc gttttgtgcg t

21

<210> 62  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 62

ctaccgtac cgaacgatcc

20

<210> 63  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> chemically treated genomic DNA (Homo sapiens)

<400> 63

aacgcaaaac gcgcccgaca

20

PCT/EP2004/012740



**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record.**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☒ **BLACK BORDERS**

☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**

☐ **FADED TEXT OR DRAWING**

☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**

☐ **SKEWED/SLANTED IMAGES**

☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**

☐ **GRAY SCALE DOCUMENTS**

☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**

☒ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**

☐ **OTHER: \_\_\_\_\_**

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**